AVIATION

The Oldest American Aeronautical Magazine

JUNE 30, 1924 Issued Weekly PRICE 10 CENTS

The one-and-a-half day Coast to Coast Air Mail on the Wing

Official Photo, U. S. Air Mail Service

VOLUME XVI

NUMBER 26

SPECIAL FEATURES

THE ANDRE HEXAGONAL TUBE RADIATOR

THE COMMERCIAL AIRCRAFT ASSOCIATION PLAN

MAUGHAN SPANS CONTINENT BETWEEN DAWN AND DUSK

ONE AND A HALF DAY COAST TO COAST AIR MAIL STARTS

GARDNER PUBLISHING CO., INC.

HIGHLAND, N. Y.

225 FOURTH AVENUE, NEW YORK

Entered as Second-Class Matter, Nov. 22, 1920, at the Post Office at Highland, N. Y. under Act of March 3, 1879.

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JUNE 30, 1924

AVIATION

VOL. XVI. NO. 26

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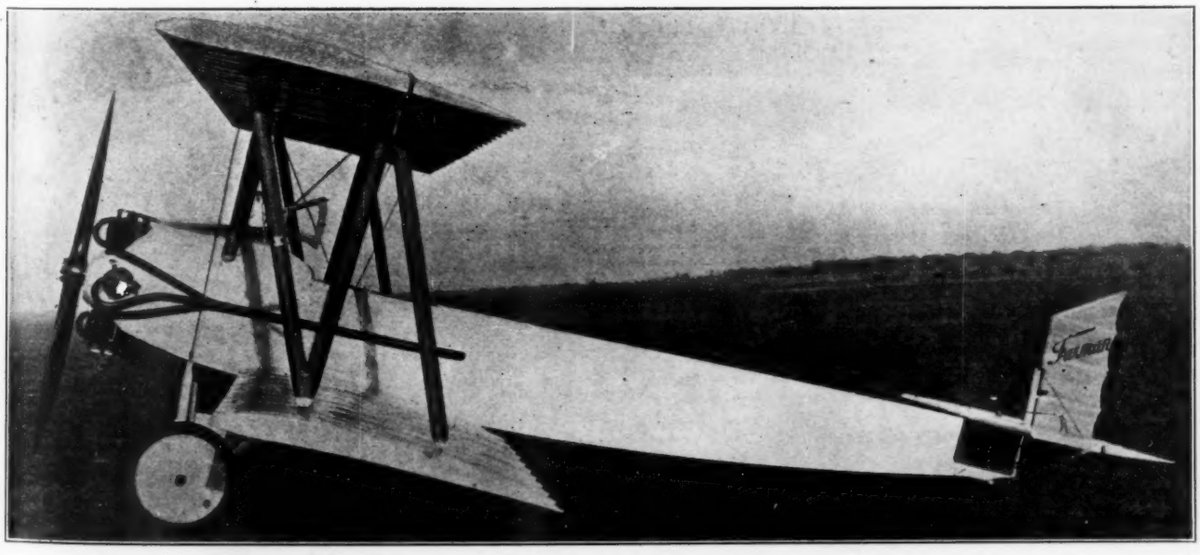
FARMAN

SPORT PLANES



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Vol. XVI JUNE 30, 1924 No. 26

The Air Mail Forges Ahead

ON the day following publication of this issue, the United States Air Mail Service will initiate what may, without any exaggeration, be called the most important commercial accomplishment of the airplane since its birth in the sand dunes of North Carolina. On July first the through-going Air Mail will be on the wing as a permanent institution between New York and San Francisco. The 2700 miles which separate these two great cities will be covered six days of every week in less than 36 hours, as against four and half days for the fastest train service, thanks to the practical solution of night flying between Chicago and Cheyenne.

Progress in aeronautics travels at record—at airplane record—speed. It is already a far cry from the distant May day in 1918, when the first feeble attempt was made to carry a few bags of mail between New York and Washington, and when the successful completion of those flights was hailed as opening a new epoch in mail transportation. Yet, the inauguration of the transcontinental through-going air mail is the direct outcome of those modest beginnings.

The unflagging devotion to an ideal which has animated the entire personnel of the Air Mail Service since its creation, which has made them overcome seemingly unsurmountable obstacles, and in the service of which many, and some of the best, paid the supreme sacrifice, at last finds a reward worthy of its endeavors, one in which every American can take justified pride.

Value of Water Recovery

A RECENT report to the Bureau of Naval Aeronautics from the naval air station at Lakehurst, N. J., states that the water recovery apparatus, installed on one of the engines of the airship Shenandoah prior to the flight made by the airship to Albany and Buffalo on June 3 and 4, exceeded all expectations in its operation during the flight. This apparatus condenses the water present in the engine exhaust gases, the water thus recovered compensating for the weight of the gasoline burned.

Experiments with the apparatus before it was actually installed on the airship indicated that a recovery of water equal in weight to the fuel burned could be expected. On the Albany flight, the first time that actual use of this device was made on an airship, these expectations were exceeded, and 100 lb. of water were obtained for every 90 lb. of fuel expended by the engine fitted with the system.

The use of the water recovery apparatus on a rigid airship, such as the Shenandoah has two very important advantages. In the first place, by compensating for the weight of fuel used, the weight of the airship is maintained more nearly equal. This makes possible a much greater cruising radius, as without the apparatus, when the airship becomes light through expenditure of fuel, a portion of the lifting gas must be valved in order to maintain the buoyancy of the airship. This loss of gas decreases the cruising radius of the airship.

Only one water recovery unit was on board the Shenandoah during the New York State flight, but now two additional units have been placed on the airship, and it is planned to fit eventually water recovery units to all five of the engines. With this installation complete, the airship will be able to operate with an economy of helium never before possible.

Another interesting angle to the use of a water recovery apparatus is that besides being available for ballast, the water recovered is suitable for use in the radiators of the engines, may be used for washing, and if necessary is potable. In this respect the apparatus is analagous to a water distilling plant used on board ships at sea.

The Parachute Saved Them

IF there are still pilots who entertain doubts as to the practical value of the parachute in serious emergencies, the flying accidents of the last two weeks should certainly help to dispel them. Within this period three pilots were saved by the timely use of a parachute, and three were killed for not carrying any.

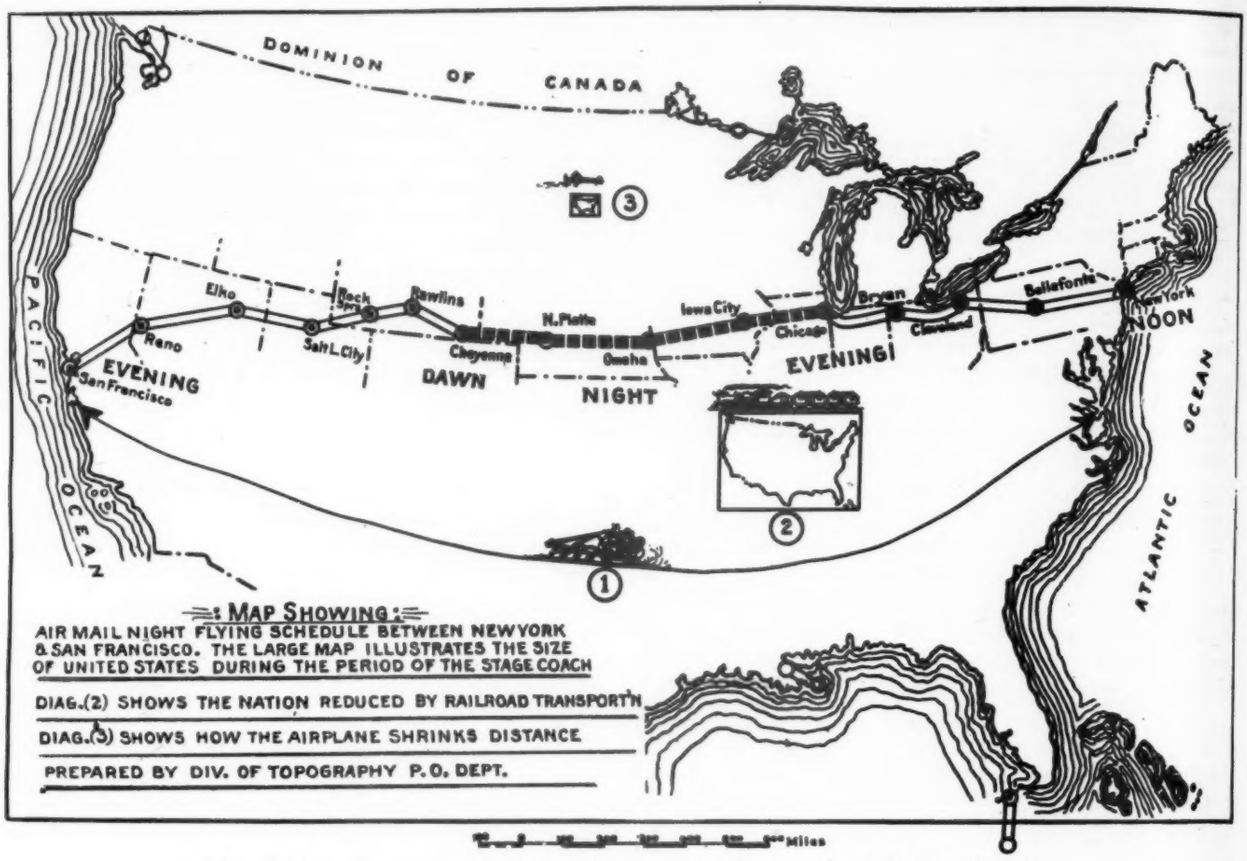
Lieutenant Macready, a veteran of countless flying exploits, would not be alive today if he had not been able to use a parachute the night when his engine went dead over Dayton, the thrilling story of which will be found elsewhere in this issue. The case of Walter Lees, another pilot of great repute and long experience, is perhaps even more telling. Being caught with hopelessly jammed controls only 150 feet above the ground, Lees went over board with his chute and landed safely. In Texas two planes collided while flying in formation, and one of the pilots was saved by his parachute, the other having apparently been stunned by the impact of the two ships.

On the other hand on June 10 two airmen of the Marine Corps and a pilot of the First Pursuit Group were killed, when their planes crashed out of control. The parachute, used in time, would undoubtedly have saved them.

The lesson is obvious. The parachute can save the lives of airmen nine times out of ten, provided it is used from a sufficient height. It is effective in case of jammed controls, a dead engine, breakage in the air, collision, fire on board. When it is considered how many valuable lives could have been saved to the aeronautic community by a general use of parachutes, we cannot but help feeling that the "aerial lifebelt" ought to be made regulation equipment on board all aircraft. In the Air Services of the Army, the Navy and the Post Office Department the use of parachutes is optional with the pilot; we believe that in their case, in particular, it should be made compulsory.

One-and-a-Half Day Coast to Coast Air Mail

Through-going Service on 2700 Mile New York—San Francisco Route Commences July 1



Map showing the transcontinental Air Mail route and one and a half day schedule

Inauguration on July 1 of the one-and-a-half day Air Mail service between New York and San Francisco will form the culmination of carefully laid plans for this great enterprise, which was experimentally tested last summer for four days in succession. The practicability of the scheme having been indicated by these tests, and Congress having since appropriated the necessary funds for running such a service all the year round, only detail work remained to be done to carry out the plan.

The map of the transcontinental mail airway which is shown above, indicates the stopping points of the service and the subdivision of the route into day and night flying sections.

SUMMER SCHEDULE

WEST

LEAVE				ARRIVE			
New York	10:00	A.M.	E.T.	Bellefonte	12:20	P.M.	E.T.
Bellefonte	12:40	P.M.	E.T.	Cleveland	2:55	P.M.	E.T.
Cleveland	3:10	P.M.	E.T.	Bryan	3:55	P.M.	C.T.
Bryan	4:15	P.M.	C.T.	Chicago	6:15	P.M.	C.T.
Chicago	6:30	P.M.	C.T.	Iowa City	9:00	P.M.	C.T.
Iowa City	9:20	P.M.	C.T.	Omaha	12:05	A.M.	C.T.
Omaha	12:20	A.M.	C.T.	North Platte	3:15	A.M.	C.T.
North Platte	2:35	A.M.	M.T.	Cheyenne	5:10	A.M.	M.T.
Cheyenne	5:25	A.M.	M.T.	Rawlins	7:10	A.M.	M.T.
Rawlins	7:30	A.M.	M.T.	Rock Springs	9:00	A.M.	M.T.
Rock Springs	9:15	A.M.	M.T.	Salt Lake City	11:05	A.M.	M.T.
Salt Lake City	10:20	A.M.	P.T.	Elko	12:35	P.M.	P.T.
Elko	12:50	P.M.	P.T.	Reno	3:30	P.M.	P.T.
Reno	3:45	P.M.	P.T.	San Francisco	5:45	P.M.	P.T.

34 Hours – 45 Minutes

EAST

LEAVE				ARRIVE			
San Francisco	6:00	A.M.	P.T.	Reno	8:00	A.M.	P.T.
Reno	8:15	A.M.	P.T.	Elko	10:45	A.M.	P.T.
Elko	11:00	A.M.	P.T.	Salt Lake City	1:00	P.M.	P.T.
Salt Lake City	2:15	P.M.	M.T.	Rock Springs	4:00	P.M.	M.T.
Rock Springs	4:15	P.M.	M.T.	Cheyenne	7:00	P.M.	M.T.
Cheyenne	7:15	P.M.	M.T.	North Platte	9:45	P.M.	M.T.
North Platte	11:05	P.M.	C.T.	Omaha	1:50	A.M.	C.T.
Omaha	2:05	A.M.	C.T.	Iowa City	4:50	A.M.	C.T.
Iowa City	5:10	A.M.	C.T.	Chicago	7:20	A.M.	C.T.
Chicago	7:35	A.M.	C.T.	Bryan	9:25	A.M.	C.T.
Bryan	9:45	A.M.	C.T.	Cleveland	12:20	P.M.	E.T.
Cleveland	12:35	P.M.	E.T.	Bellefonte	2:35	P.M.	E.T.
Bellefonte	2:55	P.M.	E.T.	New York	5:05	P.M.	E.T.

32 Hours – 5 Minutes

RATES OF POSTAGE

BETWEEN	New York	Bellefonte	Cleveland	Bryan	Chicago	Iowa City	Omaha	North Platte	Cheyenne	Rawlins	Rock Springs	Salt Lake City	Elko	Reno	San Francisco
New York		8	8	8	8	16	16	16	16	24	24	24	24	24	24
Bellefonte	8		8	8	8	16	16	16	16	24	24	24	24	24	24
Cleveland	8	8		8	8	16	16	16	16	24	24	24	24	24	24
Bryan	8	8	8		8	16	16	16	16	24	24	24	24	24	24
Chicago	8	8	8	8		8	8	8	8	16	16	16	16	16	16
Iowa City	16	16	16	16	8		8	8	8	16	16	16	16	16	16
Omaha	16	16	16	16	8	8		8	8	16	16	16	16	16	16
North Platte	16	16	16	16	8	8	8		8	16	16	16	16	16	16
Cheyenne	16	16	16	16	8	8	8	8		8	8	8	8	8	8
Rawlins	16	16	16	16	8	8	8	8	8		8	8	8	8	8
Rock Springs	16	16	16	16	8	8	8	8	8	8		8	8	8	8
Salt Lake City	24	24	24	24	16	16	16	16	8	8	8		8	8	8
Elko	24	24	24	24	16	16	16	16	8	8	8	8		8	8
Reno	24	24	24	24	16	16	16	16	8	8	8	8	8		8
San Francisco	24	24	24	24	16	16	16	16	8	8	8	8	8	8	

At such cities as show an arrival late in the day by the Air Mail Schedule the use of special delivery stamps in addition to the zone postage will insure delivery on the date of receipt.

Postage eight cents an ounce, or fraction thereof, for each zone, or part of zone, in which mail is carried by plane. Transit mail forwarded to destination by Railway Mail Service will be rated to point carried by Air Mail Service.

Transit mail forwarded to destination by Railway Mail Service will be rated to the point carried by Air Mail. No additional postage for transportation beyond the point to which mail is carried by the Air Mail Service will be required - the zone rate will deliver to addressee.

EASTBOUND

STATE	DISPATCH TO	STATE	DISPATCH TO	STATE	DISPATCH TO
Colorado	Cheyenne	Missouri	Omaha	Pennsylvania (Except Bellefonte)	Cleveland
Connecticut	New York	Montana	Salt Lake	Rhode Island	New York
Delaware	New York	Nebraska (Except North Platte)	Omaha	South Carolina	New York
Idaho	Salt Lake	Nevada (Except Elko)	Reno	South Dakota	Omaha
Illinois	Chicago	New Hampshire	New York	Tennessee	Chicago
Indiana	Chicago	New Jersey	New York	Virginia	New York
Iowa (Except Iowa City)	Omaha	New York (Except New York City-Brooklyn-Long Island & Staten Island)	Cleveland	Utah	Salt Lake
Kansas	Omaha	North Carolina	New York	Vermont	New York
Kentucky	Chicago	Ohio (Except Bryan)	Cleveland	West Virginia	Cleveland
Maine	New York			Wisconsin	Chicago
Maryland	New York			Wyoming (Except Rock Springs)	Cheyenne
Massachusetts	New York			Trans-Atlantic, Foreign	New York
Michigan	Chicago				
Minnesota	Omaha				
Southern States not Listed	Chicago				

WESTBOUND

California	San Francisco	Missouri	Chicago	Ohio (Except Bryan)	Cleveland
Colorado	Cheyenne	Montana	Salt Lake	Oregon	Salt Lake
Idaho	Salt Lake	Nebraska (Except North Platte)	Omaha	South Dakota	Omaha
Illinois	Chicago	Nevada (Except Elko)	Salt Lake	Utah	Salt Lake
Indiana	Cleveland	(Except Reno-Carson City-Tonopah-Goldfield-Virginia City)	Reno	Wisconsin	Chicago
Iowa (Except Iowa City)	Chicago			Wyoming (Except Rawlins-Rock Spgs)	Cheyenne
Kansas	Chicago			Trans-Pacific, Foreign	San Francisco
Michigan	Cleveland				
Minnesota	Chicago				

Offices not located on the Air Mail Route may dispatch by rail to connect therewith- For example: Philadelphia may dispatch to Los Angeles: by rail to New York or Cleveland, thence by air to San Francisco; thence by rail to Los Angeles. Denver may dispatch to Los Angeles or Philadelphia: by rail from Denver to Cheyenne, by air to San Francisco or New York; by train San Francisco to Los Angeles, or New York to Philadelphia.

While the normal schedule calls for night flying only between Chicago and Cheyenne—as shown on the map—the Air Mail Service recently extended the lighted airway east as far as Cleveland, and west as far as Rock Springs. This was done to prevent delayed planes from being caught by descending darkness before reaching the lighted airway.

The ground lighting system consists of five 36 in. Sperry electric arc beacons of 450,000,000 candlepower, located at Chicago, Iowa City, Omaha, North Platte and Cheyenne, respectively; thirty-eight 18 in. incandescent beacons of 5,000,000 candlepower, one each at the emergency landing fields between Chicago and Cheyenne as well as at Cleveland, Bryan, Rawlins and Rock Springs; and 5,000 candlepower A.G.A. acetylene gas beacons placed at 3 mi. intervals between the emergency fields.

The Sperry 36 in. electric arc beacons revolve completely around the horizon three times a minute, and are visible 150 mi. A flood light of equal power illuminates the runways of each main station, in the center of which, flush with the ground, is a red marker lighted from underground. The buildings, radio towers and the boundaries of the field are all outlined by electric lights.

The 5,000,000 candle power emergency lights, situated from 25 to 30 mi. apart, are mounted on 50 ft. towers and cast their beam around the horizon every 10 sec. The 5,000 candle power acetylene gas beacons flash 150 time per minute.

Macready Saved by Parachute

Lieut. John A. Macready, A.S., on June 19 escaped almost certain death by the timely use of a parachute.

Macready was returning to McCook Field from a night airways flight from Columbus when the motor of his DH stopped. After he had determined his ship was "dead," he said his first thought was to land, if possible, where no lives would be endangered. So he headed for the outskirts of Dayton, finding his position by means of the city lights.

"Then I prepared to jump," he said. "My altimeter showed I was between 3,000 and 3,400 ft. from the ground. I loosened my safety belt and threw one leg over the side of the ship, keeping one hand on the control stick.

"Finally I crawled out on the wing and attempted to nose the ship up so I could leave without any danger of having the parachute catch. I had to work fast.

"I let go of the plane and let the wind blow me free. I decided to count two before I pulled the ripcord of the parachute, so as not to foul the plane.

"I don't know in what position I was in when I left the ship, whether I was upside down or not. But I heard the parachute open with a snap and I knew I would land safely some place."

While Macready was floating earthward, Edward A. Wuichet of the Dayton Chamber of Commerce, walking below in the darkness, was startled to hear a voice from the sky say "Hello below? Hey, down there?" Macready had decided to call out to preclude injury in landing.

"I kept carrying on a conversation with those below until I felt a slight bump," he said. "They told me later I had landed on the edge of a 100 ft. cliff. Not a scratch or even a good bump."

Macready is probably the first person ever to make a night parachute leap.

One of the strangest features came after he landed. When his plane came down with a crash it was immediately enveloped in flames. Crowds congregated and stood in horrified anxiety, helpless to make a move to extricate the aviator who, they felt sure, was trapped in the flaming wreckage.

Macready suddenly walked into their midst. He had landed a short distance away and had seen the plane crash as he glided through the air.

High Speed Propeller Tests

A large turbine driven air compressor consuming 5,000 hp. and delivering 50,000 cu. ft. of air per minute at a pressure of 15 lb. was recently employed by the Bureau of Standards for producing wind velocities approaching that of sound for tests on airplane propellers. Airplane propellers are designed on the assumption that they are made up of miniature airplane wings traveling in spiral paths, but speeds approaching a thousand feet per second are attained by the propeller tips and at such high speeds the laws governing wing sections at lower speeds no longer hold. In order to design propellers of the greatest possible efficiency it is necessary to make measurements at such speeds.

The experiments indicate that at such high speeds a serious loss of efficiency may be expected with propellers of customary design, and with the aid of such tests it is hoped much of this loss can be avoided. It is difficult to make tests of this character because of the enormous power consumed in producing the high wind velocity needed, and because of the large forces on the models. The present experiments were carried out at Lynn, Mass., through the courtesy of the Lynn Works of the General Electric Company, who supplied the compressor. They were carried out in cooperation with the National Advisory Committee for Aeronautics and the Ordnance Department of the United States Army.

American World Flight

The three American World Fliers left Tourane on June 16 and successfully completed the 530 mi. flight to Saigon, the capital of French Cochin China. On June 18 they covered 675 mi., reaching Bangkok, Siam. On June 20 the fliers flew across the Malay peninsula, an overland flight of over 100 mi., landing at Tavoy, in lower Burma. In the afternoon they proceeded to Rangoon making a total of 450 mi. for the days flight. Lieutenant Smith was reported to be suffering from intestinal disorders contracted at Tavoy.

Aviation in the Republican Platform

The Platform adopted by the National Republican Convention in Cleveland contains the following reference to civil aviation:

"We advocate the early enactment of such legislation and the taking of such steps by the government as will tend to promote commercial aviation."

Maughan Spans Continent Between Dawn and Dusk

Curtiss Pursuit Plane Covers the 2700 Miles in 21 hr. 48 min.

Lieut. Russell L. Maughan, A.S., wrote a new page into the annals of aviation on June 23, when in a Curtiss Pursuit plane he successfully achieved the dawn to dusk flight from New York to San Francisco which he twice failed to accomplish last summer. The 1922 Pulitzer Trophy winner covered the 2700 mi. from Mitchel Field to Crissy Field in a total elapsed time of 21 hr. 44 min. and in a total flying time of 17 hr. 52 min.

The original schedule of the flight called for five hops of from 500 to 570 mi. in length. Maughan on his flight cut one of these hops in two, so that the flight was made in six hops as follows: From Mitchel Field to McCook Field, Dayton, Ohio, 570 mi.; From McCook Field to St. Joseph, Mo., 570 mi.; from St. Joseph to North Platte, Nebr, 325 mi.; from North Platte to Cheyenne, Wyo., 215 mi.; from Cheyenne to Salduro, Utah, 500 mi.; from Salduro to San Francisco, 520 mi.

Lt. R. L. Maughan, A. S.

Considering the distance between New York and San Francisco, and also the prevalence of head winds when flying westward, the success of such a venture depends not only upon the flawless functioning of a high speed airplane but also upon the longest possible daylight and almost perfect weather conditions. The failure of one of these factors is sufficient to jeopardize the outcome, as Maughan learned to his regret last year.

But this year everything worked perfectly, although the weather at first balked Maughan's efforts for three days. He had intended to make the flight on June 20, the one but longest day of the year, so that should the weather be unfavorable he could still count on three or four really long days. It was a wise precaution, for the weather was unfavorable for three days in succession, and the outlook seemed dark indeed. Then, late on June 22, weather reports all along the route indicated almost ideal conditions, and Maughan decided he would hop off at daybreak.

The first streaks of dawn were filtering over Mitchel Field when Maughan's Curtiss Pursuit plane was wheeled out of the hangar to the starting line. Maughan climbed in, equipped with a parachute, warmed up the engine, and was off in a mighty roar of his D12 at 3 a. m. E.S.T. At 7 a. m. he landed at McCook Field, where he was delayed over an hour when the handling crew broke the engine starter, but he was off again at 8:16. St. Joseph, Mo., saw him land in fine spirits at 10:52 a. m. C.S.T., after carefully circling over the field, for it had rained there the night before. He reported excellent weather all along the line, asked for some cold chicken and a glass of milk, got it, and hopped off at 11:37 o'clock. At 1:34 p. m. he stopped at North Platte to take on gasoline, took off again at 1:57, and landed at Cheyenne at 2:17 M.T. There he complained of nausea due to severe nervous strain, but he quickly recovered and was off at 2:54. He reached Salduro, Utah, at 5:20 P.T. feeling fine again and announcing that he had made his last stop. His prediction proved true, for having left Salduro at 5:51, he landed at Crissy Field, San Francisco, at 9:44 P.T. He was lifted from the cockpit by his cheering brother officers of the Air Service and carried on their shoulders to headquarters through a huge crowd of wildly excited spectators.

The dawn to dusk flight was undertaken by the Air Service to show the public the speed at which pursuit squadrons can be rushed from coast to coast in a war emergency, provided they are equipped with up to date planes. Lieutenant Maughan's splendid flight also serves as a reminder of the fact that the Air Service only has twenty-five ships of the type on which he spanned the continent in 21¾ hr. elapsed time and at an average flying speed of approximately 150 mi./hr.

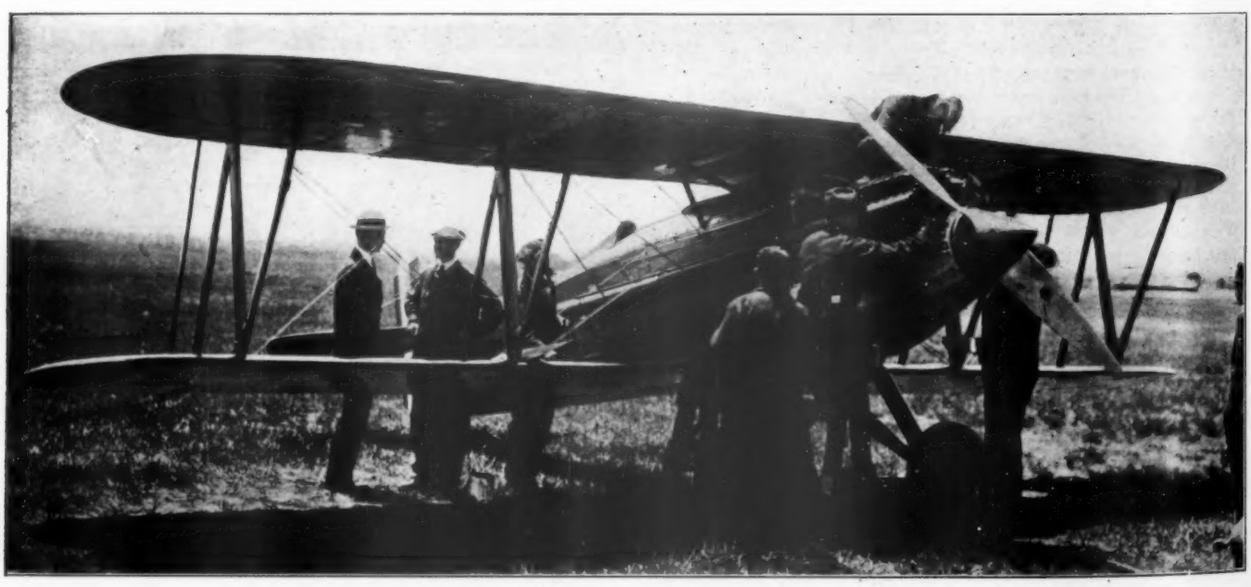


Photo International

The Curtiss Pursuit plane (400 hp. Curtiss D12 engine) in which Lieut. R. L. Maughan, A.S., on June 23 flew from New York to San Francisco in 21 hr. 48 min.

The Andre Hexagonal Tube Radiator

By R. F. STEIDEL

R. F. Steidel, formerly of the designing staff of the Barling Bomber, has just returned from abroad where he spent two years studying new inventions and manufacturing methods. During his sojourn in France, Mr. Steidel visited a great number of aircraft factories and airports, and he is particularly impressed with the advance made by France in the aeronautical field as a result of the foresighted manner in which the French governmen fosters the private aircraft industry and encourages original development work.

As a result of an extended visit to the Andre radiator factory in France, Mr. Steidel has gathered some highly interesting data on the new hexagonal tube radiator manufactured by this concern, which Mr. Steidel now represents in the United States.—EDITOR.

The honeycomb type radiator was, by reason of its general use on automobiles, the first of its kind employed on airplanes. In view of the wide popularity this type enjoys, owing to simplicity of mounting in the nose of the fuselage, and the minimum length of tubing and small number of joints required, particular interest attaches to an improved honeycomb radiator which is the invention of Vincent André, a well known French aeronautical engineer. M. André was for several years manager of the Lioré & Olivier aircraft factory, and in this connection he made a special study of the conditions arising in the cooling of aeronautical engines.

Basic Features of the Andre Radiator

The André radiator differs from the conventional honeycomb type essentially in that tubes of hexagonal cross section are used in the place of circular tubes. From this arrangement there result a greatly increased cooling surface, a freer circulation of water, and less resistance to the passage of cooling air. The reason for these improvements will be clear from the following considerations.

In the ordinary honeycomb type radiator the ends of the tubes, where they are soldered together to form the front and back headers, are expanded to a larger diameter than the rest of the tube. As the main portion of the tube is therefore smaller than these expanded ends, the outside surface presented for the cooling of the water and the internal area offered for the passage of the air are consequently reduced in proportion.

In the André radiator the tube has the same surface area throughout its length, for its ends are not expanded, although they have there a slightly different shape. A small groove in the middle of each side runs the entire length of the tube, thus increasing the cooling surface and aiding the passage of the water outside and the flow of air inside the tube. Owing to this form the cross section of the main body of the tube presents the same area as the ends, thus giving a maximum cooling surface per unit of length.

The improved cooling of the water in the André radiator is also due to a freer flow of the liquid through the tubes. In the core of the ordinary honeycomb radiator composed of round tubes the little filets or streams into which the water is broken up in its flow have a tendency to choke each other's passage. (See upper diagram, Fig 1.) As a result, a comparatively large supply of water has to be provided and an auxiliary tank installed.

In the André radiator, on the other hand, the form of the tubes and their mounting cause the filets of water to divide with the least opposition, thus producing a free and constant flow. This is partly due to the space between the tubes of the same row being double that of the space between the tubes mounted in the row above them. (See lower sketch, Fig. 1).

A considerably smaller amount of water is therefore required for cooling purposes, and no auxiliary tank is necessary, unless the radiator is mounted below the motor. In the latter case only a small tank need be installed to aid in starting the pump.

The third improvement found in the André radiator is that as the tubes are of the same size throughout their entire length, a path of minimum resistance is provided for the passage of the cooling air, whereby its effectiveness is increased.

In the ordinary radiator tubes the expanded ends compress to some extent the air passing through the tube. As a result, the air has a tendency to become heated when the plane is traveling at a high speed, and thus loses its cooling qualities. The round shape of the tube also tends to produce eddy currents in the air passing through, thus hindering its flow.

As the André tubes are of the same size throughout, there is no compression of the air. The hexagonal shape of the tube, furthermore, eliminates the eddy currents and affords a path of much less resistance for the passage of the cooling air.

It may be seen from the foregoing that the interchange of heat units between the hot water coming from the engine and the cooling air passing through the tubes is at a maximum in this radiator.

Results of Official Tests

Tests made by the "Section Technique" (Engineering section of the French army air service) show that the cooling efficiency of the André radiator is approximately one-third more than that of an ordinary honeycomb radiator with round

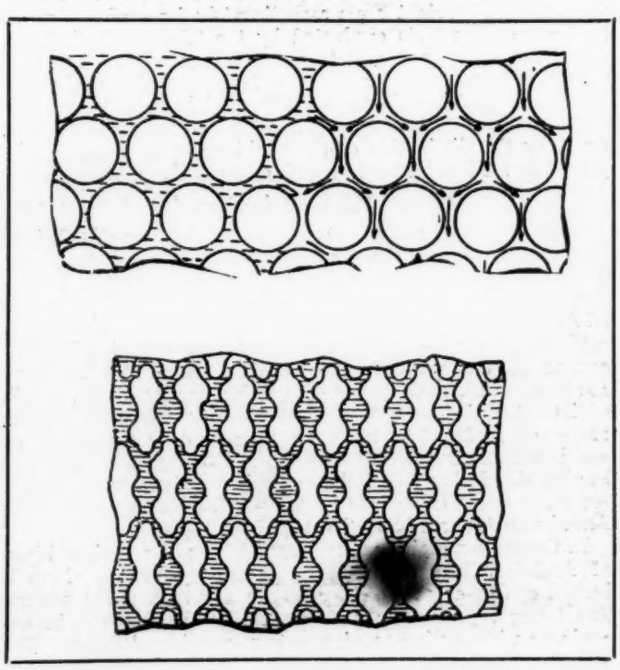
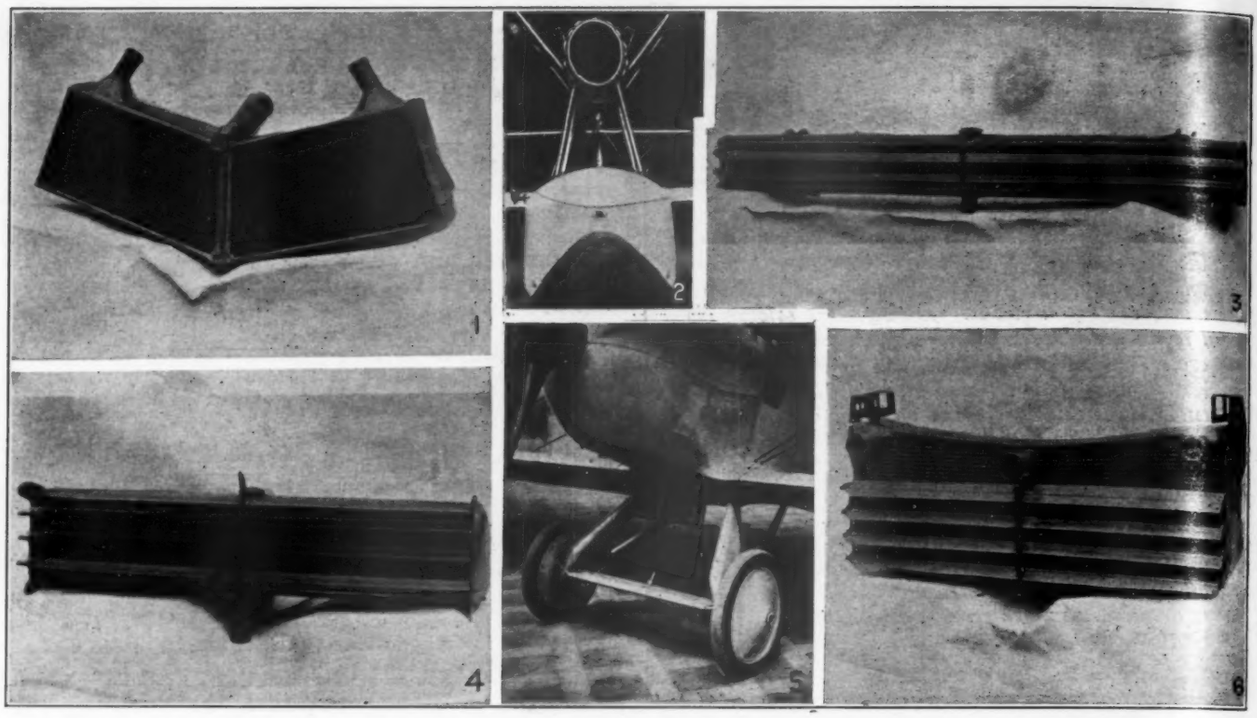


Fig. 1. Cross sections of an ordinary honeycomb radiator (top) and of the Andre radiator (bottom). The water circulates through the shaded sections



Different types of Andre radiators used on French aircraft—1, Breguet 19A2 corps observation plane (400 hp. Loraine); 2, F.B.A. flying boat (180 hp. Hispano); 3, LeO type H13 commercial flying boat (2-180 hp. Hispano); 4, LeO type 7 bomber (2-300 hp. Hispano); 5, Spad type 81 pursuit plane (450 hp. Lorraine); 6, Potez type 15 corps observation plane (400 hp. Lorraine)

tubes. The tests were made for a speed of 40 meters per second (about 90 mi./hr.) with tubes of 6 in. length. The round tube radiator gave per square decimeter (15.5 sq. in.) of frontal area a cooling surface of 46.5 sq. dm. (721 sq. in.) as against 78.6 sq. dm. (1218 sq. in.) for the André radiator, and cooled only 79 calories as against 112 for the latter.

As a result of its greater cooling efficiency, the frontal area and volume of water required for a given type of engine are substantially reduced with the André radiator, and its head resistance and weight are proportionately lessened. Thus in the comparative tests conducted by the "Section Technique" with different types of radiators mounted on a Lioré & Olivier plane equipped with two 300 hp. Hispano-Suiza engines, it was found that the André radiators weighed 45 lb. less per motor than fin radiators, and that 20 lb. were furthermore saved by the elimination of the auxiliary water tank, piping, etc. The total weight thus saved was 110 lb.

How Weight is Saved

In the case of a Potez type 15 corps observation plane fitted with a 400 hp. Lorraine-Dietrich engine, the André radiator weighed 37 lb. less than a fin radiator, and 35 lb. less than any other type of honeycomb radiator, besides saving 22 lb. in weight through the elimination of the auxiliary tank.

The tubes of the André radiators are made of hard drawn copper, the maximum efficiency being obtained at a length of 150 mm., (6 in.). Owing to the special form and short length of its tubes the radiator is particularly robust and repairs are easily made. The tubes are tested out at a pressure of one kilogram per square centimeter (15 lb./sq. in.), before leaving the factory. As the general American test required for honeycomb radiators is 10 lb./sq. in., the sturdiness of the André radiator will be obvious.

In the accompanying photographs will be seen various types of André radiators developed for use on French aircraft, including one of the "eclipse" type for high speed planes. The latter type can be withdrawn into the fuselage in accordance with cooling requirements at varying altitudes. The radiator illustrated in the upper left hand corner is the type used on the Breguet 19A2 plane in which Pelletier Doisy made his dashing flight from Paris to the Far East. The oval radiator shown next to it is mounted on the F.B.A. flying boat in which Fernand Laporte made the latest world altitude record carrying a load of 250 kg.

Some interesting figures on the frontal area, water capacity, weight, etc., of these radiators will be found in the accompanying table.

Plane	*Motor*	*Length of tubes (in.)*	*Frontal area (sq. in.)*	*Weight empty (lb.)*	*Capacity (gal.)*	*Weight full (lb.)*
Leo H13	180 hp. Hispano	4	256	52.0	4.2	88
Leo 7	2-300 hp. Hispano	6	302	71.5	3.8	103.6
Breguet 19 A2	450 hp. Renault	6	325	66.0	4.47	103.6
Potez XV	400 hp. Lorraine	6	325	73.5	3.9	107.0
Spad 81	450 hp. Lorraine	6	341	70.5	3.9	103.6
Farman "Goliath"	2-400 hp. Lorraine	6	341	76.0	6.0	125.5

Nashville Aero Club Organized

The Aero Club of Nashville was formed on June 2 at Nashville, Tenn., at a meeting of former Army fliers, including members of the 136th Squadron, Tennessee National Guard Air Service, which is stationed at Blackwood Field, Nashville.

E. C. Faircloth, Jr., was elected temporary chairman, and J. W. Warner, Jr., temporary secretary.

The charter members of the club are: Lieut. Vincent Meloy, Capt. Richard D. Gleaves, Capt. Herbert Fox, Capt. Tom Jetton, Maj. John C. Bennett, Lieut. M. G. Horkins and Lieut. Dave Lansden, all of the 136th Squadron; and J. W. Warner, Jr., P. F. Hauser, Martin A. Hayes, Walker Casey, N. S. McEwen, A. D. Creighton, Frank K. Wall, Justin Potter, T. W. Blair, S. R. Hampton, Ed. Buford, Jr., Morton B. Adams, Louis Clarke, E. J. Hardy, E. C. Faircloth, Jr.

New F.A.I. Commission

The newly formed aerological commission of the F.A.I. met for the first time in Paris on June 23. Admiral T. P. Magruder, U.S.N., naval attaché at the American embassy in France, represents the National Aeronautic Association on this commission.

The Commercial Aircraft Association Plan

Code of Regulations Drafted for Permanent Organization

The Commercial Aircraft Association of Akron, Ohio, has effected a permanent organization and adopted a Code of Regulations for its governing constitution.

The officers elected for the coming year are as follows: President, Harold A. Kullberg; Vice President, W. G. Clark; Secretary, David E. Hawthorne; Treasurer, Fred F. Smith.

The above named, together with V. C. Babcock, L. A. Davison and W. M. Sellers constitute the Board of Directors.

The Code of Regulations, which it hoped will become a model for other local Commercial Aircraft Associations, is given for the purpose of indicating to the commercial pilots in other cities a suggestive outline of the association's organization.

As stated at the time of the organization of this association, it is not intended to duplicate the functions of any local Aero Club which is social in its scope, the N.A.A. which is national and patriotic in its work, or the Aeronautical Chamber of Commerce, which represents the aeronautical industry. The Commercial Aircraft Association exists essentially for the promotion of a local interest in flying. Later, through federation with other groups of local fliers similarly organized, the Association hopes to give expression to the commercial pilot's point of view. Any information desired regarding the Association may be had by writing to Dr. David E. Hawthorne, Secretary, 672 South Main St., Akron, Ohio.

Code of Regulations

ARTICLE I

Section 1. This organization shall be known as The Commercial Aircraft Association of Akron, Ohio.

Section 2. The Commercial Aircraft Association shall be an association, affected not for profit, organized under the Laws of the State of Ohio, without capital stock, and subject to the conditions and limitations provided by Law in the State of Ohio as affecting associations of this kind.

ARTICLE II. OBJECT AND AIM

Section 1. The purpose of this Association and its aims shall be to promote the financial welfare of members interested in Commercial Aeronautics. Also, to buy, lease, own and otherwise acquire all such real estate and other property necessary or convenient to the carrying out of its purposes.

Section 2. Said purpose shall be attained by the association either by initiating such educational or other efforts as may be deemed necessary or useful by the Association or its Directors, or by cooperating with and working jointly with other agencies having a similar purpose, or by the use of such other honorable means and acts as may be deemed necessary or helpful.

ARTICLE III. MEMBERSHIP

Section 1. From and after the date of the adoption of these regulations the conditions of membership shall be: Any Aviator, Aircraft owner, owner of fields, promoter of Commercial Aviation, Mechanics, and all others interested in the development of Commercial Aeronautics, provided, however, that the applicant's membership shall comply with all rules and regulations hereafter laid down for membership in this Association.

Section 2. Application for membership. Application for membership shall be made in writing and addressed to the President of this Association. Such applications shall be accompanied by a membership fee of $5.00, or such fee as shall be determined by the Association.

Section 3. All memberships shall be of equal standing and shall entitle the holder to one vote in the affairs of the Association.

Section 4. Charter members. All members entering the Association at the date of the issuance of its Charter, and such members as shall enter within two months of such issuance of Charter, shall be termed "Charter Members," and a separate roll of these memberships shall be kept.

Section 5. Liquidation of Association. In the event of the liquidation at any future date, the assets of the Association shall be converted into cash and shall be distributed pro rata among the members in good standing; or such other disposition as shall be made of these funds as the organization shall determine upon.

ARTICLE IV. MEETINGS

Section 1. Annual meetings. The annual meetings of the Association shall be regularly held during the first week of June, at the call of the President, with the approval of the Board of Directors: notice of this meeting shall be sent to all members over the signature of the President and Secretary.

Section 2. Special meetings. Special meetings may be held at the call of the President or Secretary when deemed advisable, and the President shall, upon the written request of four or more members of the Board of Directors or the majority of members who are in good standing call such meeting; such notices shall express the object and purpose of such meetings, and shall contain the notice of the time and place of such meetings and shall be mailed to all members in good standing, at least three days prior to the holding thereof.

At such special meetings, only such business shall be transacted as the meeting was called to consider, except by unanimous consent of those members present.

Section 3. Regular meetings. Regular meetings shall be held on the first Monday of every month at 8 p. m. at a place designated by the Board of Directors. The Secretary shall send written notices, at least three days prior to the holding thereof.

Section 4. Fiscal year. The fiscal year shall end on May 31, of each year.

ARTICLE V. BOARD OF DIRECTORS

Section 1. The Affairs of the Association shall be conducted by a Board of Directors who shall be seven in number.

Section 2. At the first meeting there shall be elected seven members in good standing to the Board of Directors; four of such members shall consist of members who are actively engaged in Commercial aviation as pilots. The two directors receiving the highest votes shall serve for two years. At each annual meeting there shall be elected five new members to the Board of Directors, the two receiving the highest votes shall serve for two years.

Section 3. Said Directors shall meet within ten days after their election for the purpose of electing officers. At said meetings the Directors shall elect a president and first vice president, a secretary and treasurer, all of whom shall hold office for one year, or until such time as the officer or director shall be elected and qualified.

Section 4. The Directors, together with the officers elected by them shall constitute the Board of Directors of this organization.

Section 5. The Election of Directors shall be by ballot. A majority of all votes cast shall be necessary to elect any candidate.

ARTICLE VI. DUTIES OF THE BOARD OF DIRECTORS

Section 1. It shall be the duty of the Board of Directors to administer the affairs of the Association; to determine its policies; to fix each year its annual budget and audit its business; to determine the need of standing and special committees, and to receive the reports of all committees; to coordinate the work of the Association according to the needs of the Association and the work of cooperating agencies; to elect officers and to fill vacancies occurring on the Board of Directors.

ARTICLE VII. STANDING COMMITTEES

Section 1. There shall be standing committees appointed by the Board of Directors.

Section 2. The chairman of such standing committee shall be appointed by the President with the approval of the Board of Directors.

Section 3. Each chairman shall within ten days after his appointment select the members of his committee and report their names to the Board of Directors for their approval.

Section 4. No director shall serve on any standing committee.

Section 5. No member shall serve on more than one standing committee at the same time.

Section 6. Each committee shall have a secretary who shall keep minutes of meetings held and shall be prepared to report same to the President for the approval of the Board of Directors.

Section 7. The President with the approval of the Board of Directors may at any time call the meeting of any committee.

Section 8. Except when specified the duties and scope of standing and special committees shall be such as is indicated by their respective names, and their action limited thereto.

Section 9. All standing and special committees shall report their proceedings at the regular meetings of the Board of Directors or as requested by the President or Secretary, such report to be made in writing. At the meeting prior to the annual meeting of this association such standing committee shall make a full report of all its acts since the date of its appointment.

Section 10. The President with the consent of the Board of Directors shall have the right to discharge any committee, when such committee fails to discharge its work in a satisfactory way or with proper dispatch, provided, however, that no committee shall be discharged unless such discharge be authorized by the Board of Directors and a new committee approved and affirmed by the Board of Directors.

Section 11. All committees shall be considered discharged at the end of the fiscal year.

Section 12. The President shall fill vacancies in Chairmanships subject to the approval of the Board of Directors.

ARTICLE VIII. DUTIES OF OFFICERS

Section 1. Duties of the President. It shall be the duty and power of the President to represent the association on all public occasions, to call meetings of the Association, or its Directors, or its committees and to preside at such meetings.

Section 2. The duties and power of the Vice President, are to preside at all meetings, in the absence of the President.

Section 3. Duties of the Secretary. It shall be the duty and power of the Secretary to keep minutes of the meetings held by the Association, its Board of Directors or its committees:—to preside at such meetings in the absence of the President or Vice President; to keep a record of the work done by the Association and its committees, to call meetings of committees and receive their reports; to provide necessary or useful information to members of the Association.

Section 4. Duties of the Treasurer. It shall be the duty and power of the Treasurer to keep and render an account of all moneys collected and expended; and of all properties owned or controlled by the Association; to issue checks and notes, which checks or notes shall be countersigned by the President, with consent of the Board of Directors.

ARTICLE IX. SEAL

Section 1. The Commercial Aircraft Association shall have a seal and membership certificate of such design as the Board of Directors may adopt.

ARTICLE X. AMENDMENTS

Section 1. This Code of Regulations may be altered or amended by two-thirds vote of the members present at any regular or special meeting, provided that notice of the intended amendments or alterations shall be given by mailing the same to each member and by posting the same in writing in the office of the organization, for two weeks previous to the time on which said alterations or amendments are to be voted upon.

ARTICLE XI.

Section 1. The order of business at any regular meeting shall be as follows:

Call to order.
Reading minutes.
Communications.
Reports of officers.
Reports of standing committees.
Unfinished business.
New business.
Elections.
Adjournment.

A Prize for Aeronautical Achievement

To commemorate the pioneer achievement in aeronautics of the Wright Brothers, the Dayton Section of the Society of Automotive Engineers proposes to give a medal annually as a prize for the most meritorious contribution to the science of aeronautics reported to them during the year. The contribution to, or the discovery in, the science and art of aeronautics may include advances in aerodynamics, development in the construction of airplanes, their powerplants and accessories which will increase their efficiency or reliability in performance or flight, such as fuel systems, control mechanisms, instruments for aerial navigation, and the like. Improvements of a nature having mainly a military application, such as ordnance or aerial photography, are not included in the list of subjects for which this prize may be awarded. It is the intention to award the prize for contributions designed to stimulate increased non-military use of heavier-than-air craft.

The prize may be competed for by any individual citizen of any country, or group of not more than two individual citizens, without restrictions excepting only that officers of the parent Society, officers of the Dayton Section, members of the Contest Committee and members of the Award Committee are ineligible.

The award will be made for the intrinsic merit of the achievement itself, rather than for the merit of the paper describing it. Flight tests are considered highly desirable and it will be advantageous to the competitor to be able to include in the paper a complete report in regard to flight tests carried out under proper conditions in the presence of unbiased observers. Flight tests, however, will not be absolutely insisted upon, as it is recognized that a proposed improvement might be such that tests by an individual would be financially impossible and yet the improvement would be clearly evident to a competent Award Committee. The paper should be plainly labeled with the name and address of the author. It should be forwarded to the Wright Memorial Committee, Dayton Section, Society of Automotive Engineers, Inc., c/o The Engineers' Club of Dayton, Dayton, Ohio.

The Award Committee will be appointed annually by the Contest Committee of the Section, and for 1925 consists of Prof. E. P. Warner, Massachusetts Institute of Technology, and H. M. Crane, President of the Society. In addition, an airplane designer and a test pilot will be designated. These will preferably be secured from the Air Services of the Army and Navy. On account of uncertainty of assignments in the Air Services it is not possible to give the names at the present time.

The paper describing the achievement for which the medal is awarded shall be presented originally before the Dayton Section of the Society, either by the prize winner or, if this proves impracticable for any reason, by some member of the local Section appointed by its officers. The award for 1924 shall be on the basis of papers received up to Dec. 31, 1924, and shall be announced thereafter as soon as the necessary work in checking up the various papers received and the data contained therein can be completed. The Dayton Section reserves the right to withhold any award if, in the opinion of the Award Committee, no paper of a proper standard has been submitted. The Dayton Section reserves the privilege in future years of restricting the competition to a narrower field of endeavor than is announced for 1924. However, any such restrictions shall be announced by Jan. 1 of the year during which they are operative.

LIGHT PLANES AND GLIDERS

Edited by Edmund T. Allen

Daimler L15 Light Plane

The following description of the first German light plane, the Daimler L15 two-seater is based partly upon descriptions published in the German journals *Luftfahrt* and *Illustrierte Flug Woche*, and partly upon material supplied direct to AVIATION by Werner von Langsdorff of Riga, Latvia, who was largely responsible for initiating the work which resulted in the construction of this interesting little ship.

The L15 is the outcome of gliding experiments initiated in 1918 by Hans Klemm, then chief designer of the Daimler-Flugzeugbau, and now managing director of the Daimler works at Sindelfingen, near Stuttgart. The experiments were made with a machine not suitable for gliding, the Daimler pursuit plane L11, and indicated the possibility of soaring in the currents blowing over the slopes of a range of hills. In 1919 a monoplane glider with low-power engine was constructed at the Daimler factory to the designs of Herr Klemm. Unfortunately the machine was damaged while testing a new propeller, and the experiments had to be discontinued, mainly owing to the difficult financial conditions obtaining at the time. It was not until 1922 that work on the machine could be resumed. The old wings and fuselage of the 1919 machine were overhauled and reconditioned, but the machine was changed from a light plane to a pure glider. On this machine, piloted by Martin Schrenk, glides of 12 min. duration were made, and distances of 4 km. (2½ mi.), with a loss in height of only 250 m. (820 ft.) were covered. The machine proved to be a good glider, efficient aerodynamically and possessing ample controllability. The next step was the conversion into a light plane, which resulted in the production of the type L15. Here it is of interest to note that the idea of the dual purpose of light plane and glider has been retained, the machine being capable of being converted from one into the other very rapidly.

The Daimler L15 has a fuselage of ordinary construction, with four longerons and formers and wire bracing. In section the main structure is rectangular, but fairings are added

The Daimler L15 light plane, which has carried two persons with a 12 hp. engine and which may also be flown as a glider

at top and bottom to give better streamlining. The covering is fabric doped in the usual way.

The cantilever monoplane wing is of ordinary construction in that it is built up over two box spars. It is, however, built in three sections for ease of transport, the two end sections being attached to the center section by quick-release devices. Lateral control is unusual in that, in addition to the usual ailerons, pivoted wing tips are employed.

The undercarriage is of the divided type, each wheel being supported on a pyramid of three tubes, two of which run, in Vee formation, to the fuselage longerons, while the third is taken to a point inside the center-section of the wing. Shock-absorbers are housed inside the wing. The wheels consist of laminated ash rims with three-ply discs. On tests one of the Daimler wheels withstood without breaking a load of 1,320 lb., although its weight was but 2.64 lb.

When the center-section of the wing is removed on dismantling, the undercarriage has to be braced to stabilize it. This is done by three cables, one running from one wheel to the other, and one on each side running to a point on the fuselage. Thus bracing is sufficient for light loads only, of course, such as for trailing the machine behind a motor-car.

The engine fitted in the L15 is a motor-cycle engine rated at from 7 to 9 hp., but which develops at the speed at which

Daimler L15 light plane in course of assembly from its constituent units. On the left, the "glider nose" may be seen lying near the flagstaff

it is run in the machine about 12 hp. The engine is an air-cooled Vee-twin, mounted on a steel structure in the nose of the fuselage. A planet reduction gear has been added to obtain better propeller efficiency. The gasoline tank is carried behind the engine, and direct gravity feed is used.

As was said before, the L15 is convertible from light plane into glider and vice versa. This is accomplished by building up the nose of the fuselage as a separate unit. The "glider nose" contains a cockpit, while, if desired, a passenger can be carried on the cockpit on the wing spars. Incidentally, the controls then allow of the machine being used for school work (dual). For use as a light plane the "glider nose" is removed and the nose containing the engine and tank substituted. The fastenings used for securing the noses are of a type requiring no adjustment and no special tools. When the machine is used as a two-seater light plane, the passenger sits immediately behind the pilot, in a cut-out in the trailing edge and just behind the rear spar.

The following particulars are available relating to the characteristics of the L15. The wing span is 41 ft. 4 in. Already several very good performances have been put up by Herr Schrenk. Thus during a solo flight he reached an altitude of 7,050 ft. With passenger the machine has climbed to 1,100 m. (3,600 ft.). During a solo flight the machine remained up for 3 hr. and while carrying a passenger a duration of 2 hr. was attained. The longest non-stop-cross-country flight made solo was 118 mi., and one flight of 75½ mi. was made with a passenger.

In view of the low engine power, these performances are highly creditable, more especially so when it is remembered that the machine was virtually designed four years ago, that is, before the Rhoen competitions had really shown the way to the efficient glider and light plane.

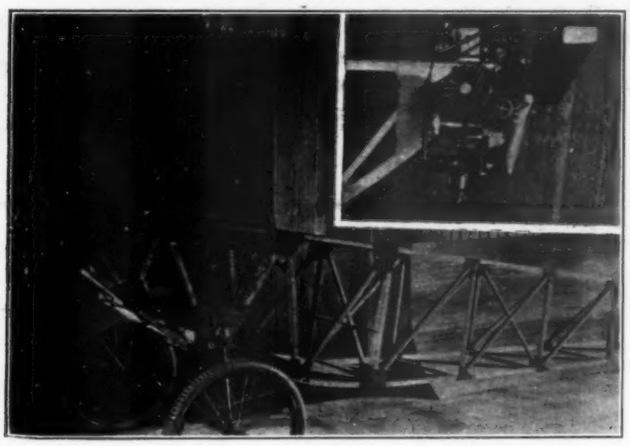
The A4 Light Plane

(Continued from our last issue)

The fuselage was the first part to be carried out in detail. Four spruce longerons of square section tapering from ¾ x ¾ in. to ½ x ½ in. form the corners. The sides are Warren trussed with ¾ x ¾ in. members glued and nailed with plywood gusset pieces. This light, simple construction eliminates all truing up difficulties. At each station, the top and bottom of the box consist of perpendicular cross members, tied by diagonals of spruce, and reinforced securely with

double gusset pieces. Torsional bracing consists of single ¾ x ¾ in. square spruce diagonals at each station. This makes the fuselage extremely rigid in torsion. Triangular bits of plywood, 1/16 in. 3-ply mahogany veneer, on each side of a joint hold far beyond the maximum compressive strength of the members themselves. Good casine glue, well made, never lets go.

It must be remembered that in practically all of the small fuselage members, including the longerons, the dangerous stress is compression, and each one must be analyzed on the basis of its failure in buckling. Each section of the longerons, between stations must be analyzed as in a bridge truss, unless, as one aircraft designer said, he "would never use anything



The fuselage and the engine mounting (shown in inset) of the A4 light plane. The engine is a modified 37 cu. in. Harley-Davidson

less than 1 in. x 1 in. for longerons." But he would never build a fuselage having a minimum factor of safety of 13, and around the cockpit, of 20 with a structural weight of 25 lb. These are the figures for this design. Pilot's seat, controls, tail skid and engine mounting bring this weight up to 33 lb. exactly.

A mechanical error was made, apparently, in not continuing the orthogonal construction of the rear part of the fuselage up to the front. The design departed from this straight up and down construction in order to provide a station to which the V struts from the wing spars could be pinned. The mistake makes necessary a great increase in labor to construct fittings on wings and fuselage where stresses are out of the vertical. Had the two wing struts been parallel, each fastened at the lower longeron directly under its own spar, the labor cost of this part of the work would be less by half.

The floor of the cockpit is made of a section of ¼ in. 3-ply fir, a very tough material, especially suitable for taking the unusual stresses at this point. The pilot sits directly on the floor board, with his feet raised to a rudder bar that is higher than his hips. This may appear to be a cramped position until one remembers that one is rather comfortable leaning back in a swivel chair with one's feet on the desk.

Interest in Light Planes

A striking proof has just been furnished of the widespread interest that exists in this country in the light plane.

Following the announcement in our issue of May 26 that the National Advisory Committee for Aeronautics (Navy Building, Washington, D. C.) had just published a report on light plane construction, the N.A.C.A. was literally swamped with requests for this report. The first edition of 130 was exhausted very soon, and a second edition of 135 which was then issued is also going rapidly. Requests came in at a rate of from ten to twelve a day at first, and are still coming in, though more slowly.

For the benefit of those who did not read the original announcement it may be said that this N.A.C.A. report constitutes a sort of composite reply to the numerous queries the Committee received with regard to the problems arising in light plane design and construction. The report also contains detailed information on all the light planes that successfully flew at the Lympne meet last fall, with line drawings, to scale, accompanying each description. The question of propeller design is also dealt with in a comprehensive manner. Altogether, this report will be found indispensable to all those who are interested in the light plane type of aircraft from the viewpoint of either design, construction or operation.

Holders of F.A.I. Licenses

Thirty-six F.A.I. annual licenses and nineteen certificates were issued to pilots during the period from April 1 to May 19.

The annual license is issued gratis to pilots who possess the F.A.I. certificate and is required for race meets and other sporting events conducted in accordance with F. A. I. regulations. The F.A.I. certificate is international and is recognized in twenty-four countries who are affiliated with the Federation.

To qualify for the certificate, a pilot is required to pass certain tests in accordance with F.A.I. regulations in the presence of official observers appointed by the Contest Committee of the N.A.A. A fee of $5 and two photographs must accompany each application.

Following are names of those who received licenses, together with their certificate and license numbers, in the order given.

Spherical Balloon Pilots—R. Emerson (53, 22), John M. Yolton (970, 23), Lt. Wm. A. Gray (877, 24), Carl K. Wollam (388, 25), Harrison C. Finley (971, 26).

Airship Pilots—R. Emerson (40, 4), John M. Yolton (205, 5).

Seaplane Pilots—Charles Walber (783, 26), John A. Larson (787, 27).

Airplane Pilots—Merrel Brock (6084, 74), Orie M. Coyle (6085, 75), Charles S. Jones (4105, 76), R. W. Musselwhite (6046, 77), John W. Hunt (6086, 78), William K. Pope (6087, 79), Lt. Harry H. Mills (2696, 80), Vance A. Davis (6043, 81, James H. Mezo (6007, 82), Will D. Parker (734, 83), Chas. M. Quinn (6063, 84), Raymond C. Crawford (6088, 85), Arthur C. Chester (5010, 86), Charles W. Simpson (5088, 87), John H. Livingston (6089, 88), Lt. Eric G. Hoylman (6090, 89), Lt. Gerald G. Johnston (6091, 90), Lloyd Stearman (6092, 91), Walter H. Beech (4717, 92), Lt. Edward W. Rounds (6093, 93), Dorsey A. Askew (6094, 94), Cecil A. Kellison (6095, 95), Harry Williamson (6066, 96), Usher E. Rousch (6096, 97), Ray Meador (6097, 98), Edward B. Tracy (6098, 99) John V. Anderson (6099, 100).

Dutch Entries for Tour de France

The first two entries for the Tour de France des Avionnettes have been received from the Vliegtuig-Industrie "Holland," a new Dutch firm devoted to light plane construction.

The first of the planes entered is a single-seater cantilever monoplane equipped with a 22-25 hp. Anzani engine of 110 cu. in. piston displacement. The span of the machine is 25 ft. 4 in., the overall length 15 ft. 9 in., the wing area 108 sq. ft. and the weight empty 375 lb. The Belgian pilot Raparlier recently made in a ship of this type a return trip from Rotterdam, Holland, to Paris, despite very bad weather conditions.

The second Holland light plane entered is a two-seater biplane equipped with a 30-35 hp. Anzani engine of 134 cu. in. piston displacement. The span is 25 ft. 4 in., the overall length is 19 ft., the wing area 151 sq. ft. and the weight empty 473 lb. Fully loaded with pilot, one passenger and fuel for 3 hr. flight the plane weighs 790 lb. The high speed is 70 mi./hr. and the low speed 22 mi./hr. These figures were checked by the Netherlands army air service, and it may be added that the high speed was obtained with 1200 r.p.m., whereas the normal speed of the engine is 1500 r.p.m. In the climbing tests the ship reached 6900 ft. in 40 min.

AIRPORTS AND AIRWAYS

Cleveland News

By Cy Caldwell

Pictures of the opening of the Republican National Convention taken by the several news photos companies and newspapers were rushed to the Glenn L. Martin Field where several planes were waiting to transport them to Chicago and to New York. By order of the Postmaster General the Air Mail operated a special service in both directions at 1.30.

W. W. Meyer left soon afterward for Chicago with pictures for the *Herald-Examiner*, while the writer hopped off in the new Martin Commercial Plane at 1.37 with pictures and zinc half-tones for N.E.A. Service Inc. The new plane showed splendid performance on this, its first commercial flight, making the run to Chicago in 3 hr. 33 min. at a cruising speed of over 90 mi./hr. all the way. With full tanks the plane made the run non-stop, landing at Chicago with 35 gal. of gas still in reserve.

W. L. Smith, who also was to have flown to Chicago, flew instead to New York with Pathé News Reels and pictures for International and New York News, arriving at West Side Park at 7.25 p. m., just 3 hr. 35 min. flying time from Cleveland. The news reels of the Convention, taken, developed, and printed in Cleveland by 3.30 p. m. were shown at the Strand Theatre, New York, at 9.30 that night. It is reported that Tex Rickard is staging a race between "W. L." and Halley's Comet, and that the betting is heavily against Halley.

C. H. Ames of the Air Mail Service, flying a C6 Oriole owned by Harry H. Packer of Cleveland, left at 4.30 p. m., arriving Chicago 8.35 p. m. with Pathé News Reels of the Convention, which were shown in Chicago at 9.30, putting the audience soundly asleep by 9.37.

Capt. B. E. Skeel and Lieuts. O. W. Broberg and J. D. Summers flying MB3's arrived from Selfridge Field and treated Convention visitors to a thrilling exhibition of stunt flying which greatly refreshed the delegates.

Pilots J. G. Ray and C. B. Q. Collyer dashed in with 400 lb. each of the *New York Times* and the *New York World* for Convention Delegates, who, it is presumed, will carry these papers to the folks back home as a souvenir of New York.

On the last night of the Convention the veteran pilot Art Smith entertained the delegates and approximately nine tenths of the population of Cleveland with "death-defying loops in mid-air in a flaming airplane," to quote a gifted contemporary. It was a splendid exhibition, and having seen Art perform, there was nothing left for the Convention to do but nominate the Vice-President and go home.

H. A. Kullberg, Akron's chief of aerial police, complete with badge, flew over with W. G Clark in the latter's SVA. Kullberg is an old Royal Air Force man and during the war received many decorations.

The L. H. Scott Flying Circus of Marietta, Ohio, flew in on June 13, after playing New Philadelphia and Lorain—the latter town being frequently mentioned in vaudeville here in the same manner that Hoboken is mentioned in New York. Scott is an old 9th Squadron man, while his pilots, Earl Woodgerd and W. T. Matthews, were with 90th Squadron. Scott pioneered West Virginia for three years, inducing many towns to endow flying fields, as well as teaching English to some of the inhabitants of those parts.

Eddie Stinson arrived June 14 in one of his Junkers planes from Detroit, accompanied by Alger Graham, and carrying five Detroiters to play golf on Saturday and get a little spiritual encouragement on Sunday, when they returned.

The last Convention delegate has been helped aboard his train, the Convention Hall is closed, the last plane has departed, and over the Glenn L. Martin Field has descended a Sabbath stillness, broken only by the low sad call of the throstle hovering over his nest.

The Convention is over.

Boston News

By G. W. Hamblin

At the opening of the Westfield Airport, June 6, there was quite a lot of excitement when two Jennies, piloted by Lieutenant Whitten and Captain Kilgore, got all mixed up with each other in landing and damaged both ships considerably. Neither flier was hurt, and both demanded cigarettes when they hopped out of their respective planes.

That same day a civilian ship from Miller Field, N. Y., was washed out when the motor cut out and the pilot tried to duck her into the field, not having enough altitude to clear a clump of trees. The pilot was uninjured, escaping by the skin of his teeth.

* * *

Lieutenant Valentine, commandant of the field, is on his way back from McCook Field, Dayton, in a new Jennie, which he exchanged for an old one. He is expected at the field within a week.

Lieut. R. C. Moffat, former commandant of the field, flew in from Selfridge Field, Mich., where he is stationed, Thursday, June 5, in a TM pursuit ship, taking seven hours for the trip. It is a coincidence that, one year after he landed the first ship at the field, he flew in with a type of plane that has never before been landed at the Airport. He took part in the Aerial Circus at Westfield during his stay. He hopped off for Selfridge Sunday, June 8.

* * *

Capt. Louis R. Knight, Air Officer, First Corps Area, hopped off with Lieut. Jimmie Doolittle, on Friday the thirteenth, for Mitchel Field, N. Y., both flying DH's, solo. When they were near Fall River the motor of Captain Knight's ship cut out and he headed for a field. Unfortunately he did not reach the field and one wing caught on a tree, throwing him into a stone wall. The gas tank caught fire and he jumped for his life. Fortunately he sustained no injury, and, after Lieutenant Doolittle landed, he climbed into the latter's machine and continued the flight to Mitchel. He was flying the DH down to have a new motor installed, but now—a new plane is needed.

* * *

That same day, Lieutenant Fallidge, a Reserve Officer, was attempting to take off from a small field near Ipswich. His undercarriage caught on some wires and the ship was thrown over on it's nose and became a complete washout. He, too, escaped injury, and save for a shaking up, was O. K.

* * *

"Eddie" O'Toole brought his Canuck to the field last week and has done some large amount of commercial work.

Bellanca's Company Incorporates

G. M. Bellanca, designer of the well known Bellanca cabin monoplane and who has recently been engaged on an order for high lift wings for the Air Mail Service at the plant of the former Lawrence Sperry Aircraft Corp., Farmingdale, L. I., is now president of a new manufacturing company, the Columbia Aircraft Corp. Work will continue at the Sperry plant for the present under lease.

Mr. Bellanca has submitted to the Post Office Department, under the name of the new corporation, a design for a mail plane based upon the recent proposals for new mail ships.

It is understood that beside such Government work as may be secured by it, the Columbia Aircraft Corp. expects to bring out commercial types from Mr. Bellanca's designs.

Dayton News

By Maurice C. Hutton

Leaping 150 ft. with a standard Army parachute from a disabled ex-German war plane, Walter Lees, test pilot with the Johnson Airplane and Supply Co., and winner of the Flying Club of St. Louis race last year, had a miraculous escape from death June 13. Although allowed but the minimum distance to perform, the parachute functioned perfectly and opened just before Lees struck the ground. The shock from the abrupt opening broke the force of the fall and the pilot was uninjured.

The accident occurred during the early evening while Lees was testing the plane which had been rebuilt for Frank Smith, of Middletown, Ohio. As he was gliding down to land, the fire extinguisher jarred loose and jammed the controls. Unable to kick the device loose and seeing a crash was inevitable, Lees stood upright on his seat and plunged overboard. Al Johnson saw the procedure from the ground. The falling flier disappeared behind a patch of trees and it was not until his friends reached the spot that they knew the chute had opened.

Army records show that Lees is the fifth aviator in the United States to escape death in this manner. As far as can be determined locally, he is the first commercial flier to survive such an accident by the use of a parachute.

* * *

An aerial life preserver for pilots flying over water was put through a series of tests at McCook Field last week. The equipment consists of an ordinary looking flying suit padded with Kapock, a sponge rubber product of France which is unusually buoyant.

R. C. LeVan, of the equipment section of the A.S. Engineering Division, demonstrated the suit in a swimming pool. He jumped off the high dive with a parachute attached to his back so as to be carrying a maximum load. Despite the fact that the parachute became thoroughly saturated with water, LeVan was in no danger of being pulled under the surface.

* * *

A third commercial flying field was opened here last week by H. E. Elliott, test pilot at McCook Field, and Sergt. H. C. Buton, pioneer aerial dare-devil of the country.

The new station is known as the Old Oak flying field and is located on the model airway route between Dayton and Indianapolis. Two Curtiss Jennies have been put into active service and two more will be assembled within a short time.

Elliott will be in charge of the flying. Sergeant Buton will perform in mid air as an added attraction. Both are Dayton boys.

The American Association of Engineers, at its May meeting, created an Aircraft Committee consisting of the following members:

Leon N. W. Colin, consulting engineer, chairman, City Island, New York; James P. Welsh, civil engineer; E. S. Dixon, civil engineer, executive secretary.

The regular meetings of the Association are held on the second Tuesday of each month in the Blue Room of the Hotel McAlpin, at 8 p. m. No meetings will be held during July and August.

All communications should be addressed to the chairman, Leon N. W. Colin, Consulting Engineer, City Island, New York.

Chicago News

By R. W. Schroeder

W. W. Meyer, pilot for the Heath Airplane Co., carried 120 passengers during the month of May, in spite of much inclement weather. In addition to this E. B. Heath carried a number of passengers himself. Decoration Day and the following Sunday were busy days, some times five ships being up at the same time.

Ed LaParle and W. W. Meyer flew their ships over the christening celebration at Riverview Park Decoration Day, dropping flowers on the boat and Mayor Thompson's party.

Stanley Wallace, for many years a draughtsman in the Heath shops, is operating a field at River Road and Lawrence avenue. Some of the pilots from Heath (ex-Nimmo Black's) airport went over there Decoration Day and carried a good many passengers. The field is rather rough, though, and rolling, which makes it pretty difficult to make a smooth landing.

Henry W. Clark and B. C. Timm have bought a new MF boat from the Yackey Aircraft Co., and are setting it up in Belmont Harbor. They expect to make the near-by summer resorts this summer. Clark received his flying instructions from Lincoln Beachey, having traveled with the latter for a long time as mechanic.

Otto Klein is again wielding his pen in order to boost aviation in Chicago. He is now writing for the *Northside Citizen*, one of the oldest and best papers on the North side.

On a recent Saturday afternoon four passengers insisted in being taken up at Heath airport, despite a drenching rain. Needless to say, they were women passengers. They were determined to go, although the rain began to come down in buckets. Pilot Meyer, being a married man, realized the folly of attempting to change the ladies' minds. In fact, there being four of them, he was quite overwhelmed by their pleadings, with the result that he took up one after the other. They enjoyed the trip immensely and were greatly surprised upon viewing the city from the air of finding so many rivers, lakes and islands upon and around the Heath airport.

On June 2 Pilot Meyer flew to Cleveland to bring back moving pictures of the big convention for one of the morning dailies. He used the Heath Favorite, equipped with an extra gas tank, which was installed on five minutes' notice.

The Heath Company has purchased a Hisso Standard. The ship is now in their shop, being rebuilt and slightly widened to accommodate four passengers. It will have the ship flying in about a month.

LaPierre Cavender made a memorable flight recently when he carried photographs of the Louisville Derby to Chicago for one of the local newspapers. Cavender left Chicago on a Friday at 11 a. m. and arrived at Louisville at 2:30 p. m. He remained there until late in the afternoon of the following day, awaiting the pictures of the Derby which was set for 5:30. It was only at 6:30 that the photographers rushed the pictures to the waiting plane, and Cavender lost no time in hopping away. A strong wind was blowing, and at dayfall the sky was darkening rapidly, dense clouds gathering. Over Lafayette, Ind., the pilot found himself in complete darkness and from there on he followed his compass. Over Chicago the thunderstorm was ready to break, flashes of lightning coming nearer and nearer as the plane roared through the blackness. Soon rain began to fall, and every now and then the motor would miss, due to temporarily short-circuited plugs. When over Chicago Heights, Cavender decided he would land rather than negotiate a flight over the populated sections of the city, for his motor was now missing badly. The flashes of lightning showed him a small field sparsely dotted with trees, and there the pilot landed at 9:40 p. m., coming to a stop 25 ft. from a high powered electric line. The pictures were rushed to the city by automobile, arriving in ample time for the morning edition.

Spokane News

By E. H. Partridge

The required fund of $10,000 for bringing the National Guard air base for the Ninth Corps area to Spokane has been pledged in full by business men, timber associations and various other organizations. Two hangars are to be built and six planes stationed here.

Foster Russell, active in aviation in Spokane since 1919 died on June 14, eight hours after he had crashed in a plane. He was head of the Foster Russell Aviation Co., maintaining the only private field in the city. Tom Moar, Russell's mechanic, was unhurt.

Wenatchee, Wash., proposes passage of an ordinance to prevent flying lower than 1500 ft. above the city. It is fashioned after Spokane's aerial law.

Night Flying Show at Columbus, Ohio

Under the auspices of the Aero Club of Columbus, Ohio, a special exhibition of night flying was staged at Norton Field, in that city, on May 23 by Lieut. Harold R. Harris, chief of the Flying Section at McCook Field.

The demonstration included the dropping of landing flare bombs, rocket-shooting, moving pictures, and a talk on the experiments being conducted by the Air Service to develop night flying.

Akron News

By Herbert Maxson

Akron, the residence of W. T. Van Orman and C. K. Wollam, the pilots of the balloon Goodyear III, and of Maj. N. W. Peek, A.S., who has been stationed here for the past two years, "tuned in" its radio sets Sunday, June 15, for the series of special radio programs broadcast to the American pilots in the International Balloon Race.

The programs Sunday, June 15 from Station WBZ, operated by the Boston Herald-Traveler at Springfield, Mass., marked the first trans-oceanic radio effort in the history of the James Gordon Bennett air event. The radio feature was planned by The Goodyear Radio Club and made possible through the co-operation of Springfield station officials.

Although Van Orman cabled Akron following his landing at Amsterdam, Holland, he has not yet communicated with the radio group in relation to the reception of the messages sent out during the first night of the race. Radio authorities are confident that the signals sent from the Atlantic seaboard station were picked up by the American pilots during their flights.

* * *

Herman Kraft, an aeronautical engineer with The Goodyear Tire & Rubber Co., will return from Germany this month where he has been observing the final construction operations on the new Zeppelin ZR3.

* * *

P. W. Litchfield, president of the Akron chapter, National Aeronautic Association, is now in Europe. He will return late in July.

Hugh Allen, secretary of the Akron chapter is at present in Friedrichshafen, Germany.

* * *

Winners of the Akron model aircraft contests, held May 10 and May 31, were guests of the Akron Rotary Club, June 3. Before the luncheon a down-town street was cleared of traffic and the boys demonstrated their flying models before several hundred spectators.

Some of the young plane builders will enter the Mulvihill miniature events to be held in Dayton, Ohio in October.

* * *

The RS1, the first semi-rigid airship to be built in this country, is nearing completion in the aeronautical departments of The Goodyear Tire & Rubber Co. The ship will be assembled at Scott Field, Belleville, Ill., for its trial flights sometime this fall it has been announced.

Litchfield Offers Balloon Trophy

P. W. Litchfield, first vice president of the Goodyear Tire & Rubber Co. of Akron, Ohio, has offered to provide a trophy for future winners of the National Elimination Balloon Race. Provisions of the deed of gift for such a trophy are now under consideration.

It is proposed that the trophy might be made international in character by allowing foreign balloonists to compete in American Elimination Race. It is pointed out that a provision could be inserted in the deed of gift that in all cases the race will be held in the United States whether or not the trophy is won by an American.

It is further pointed out that in the event of foreign competition, the meet could still be a National Elimination Contest for the Gordon Bennett Race, by choosing the three leading American pilots regardless of who might finish first.

In providing such a trophy, Mr. Litchfield will perform a real service for aeronautics, as it will no doubt add materially to the interest taken in balloon racing in this country and lead to renewed development of lighter-than-air navigation.

Atlantic City Wants Seaplane Race

A seaplane race from New York to Atlantic City may be a feature of the summer's activities along the coast, if plans proposed by Commodore Ford R. Patzowsky, of the Atlantic City Yacht Club, to the N.A.A. Contest Committee are carried out.

It is proposed to offer $1,250 in prizes for the event and a $250 cup.

How Records are Authenticated

In reply to inquiries regarding the manner in which records are authenticated under F.A.I. regulations, the following information will be of interest:

The Fédération Aéronautique Internationale is an international union of federations or clubs that control aeronautic sport in their respective countries. It was formed on Oct. 14, 1905.

Its representative in the United States is the National Aeronautic Association.

Other countries represented in the F.A.I. are: Argentine, Austria, Belgium, Brazil, Chile, China, Czechoslovakia, Denmark, Finland, France, Great Britain, Holland, Italy, Japan, Norway, Poland, Portugal, Rumania, Spain, Sweden, Switzerland, Uruguay and Yugoslavia.

All attempts at record performances made in accordance with the F.A.I. regulations, and in the categories established by that body, are examined, authenticated or rejected by the national federation in the country in which the attempt is made.

For instance, if a record is made in the United States and it is found to be authentic and to exceed existing American records, it is authenticated by the N.A.A. Contest Committee as a new national record. It is then immediately transmitted to the office of the F.A.I. and if it exceeds the existing world record for the same type of performance it is admitted by that body as a new world's record.

New Firm Specializes in Covering Work

Under present conditions in the aircraft industry, with small orders or no orders the rule, and no definite prospects of sufficient business over a reasonable period to warrant maintaining a complete manufacturing organization, several aircraft manufacturers have found it to their advantage to place certain work with outside concerns. This is particularly true of wing covering operations, including attaching the fabric, doping, etc.

Out of this situation has recently grown an organization known as the Endom Covering Corp., of Hasbrouck Heights, N. J., which has been in operation since February. This company contracts to do complete jobs of wing covering, doping, attaching tape and cord and sends its skilled workers to the plant of the aircraft manufacturer.

George A. Endom, president of the company, had charge of covering the flying surfaces of the Barling Bomber; also the covering of 400 DH's under Voisin. The company is now covering 50 sets of DH wings for the Army.

C. D. Chamberlin, vice-president and treasurer of the company, is widely known in local flying circles as a pilot and dealer in planes and engines under the firm name of Chamberlin-Rowe Aircraft Corp. of Hasbrouck Heights, N. J.

Richmond, Ind. Builds Airport

Plans for a commercial airport in Richmond, Ind., took definite form recently when a committee of business and city officials met with representatives of a flying company. All arrangements were made to lease and fully equip a field a few miles to the north of the city on the Chester pike.

A concrete circle marker will be erected, and buildings on the field will be fitted with gasoline and oil tanks and other materials necessary for airplane upkeep. Other features of the field will be up-to-date radio and telephone apparatus and a complete collection of air maps and data regarding aerial transportation.

Flying Meet at Old Orchard, Me.

Temporary sanction has been issued by the Contest Committee of the N.A.A. to C. Fayette Staples Post, American Legion at Old Orchard, Me., to hold a flying meet in that city Aug. 29 to Sept. 1.

An extensive program is being worked out for the air meet, details of which will be made public at a later date.

Personals

B. C. Bolton, formerly design engineer at McCook Field, is now with the Loening Aeronautical Engineering Corp. of New York.

UNITED STATES AIR FORCES

U. S. ARMY AIR SERVICE

Army Air Orders

First Lieut. Frederick P. Kenny, A.S., Fairfield, Ohio, to New York City, and sail on or about June 13, 1924, for the Panama Canal Zone.

Maj. Harold A. Dargue, A.S., Command and General Staff School, Fort Leavenworth, Kan., to Bolling Field, D. C.

First Lieut. Horace S. Kenyon, Jr., A.S., O.C.A.S., Washington, D. C., to Organized Reserves Ninth Corps Area, to Clover Field, Santa Monica, Cal.

Maj. Walter G. Kilner, A.S., Bolling Field, D. C., to O.C.A.S.

Capt. Theose E. Tillinghast, A.S., McCook Field, Ohio, to Selfridge Field, Mich.

Maj. William C. McChord, A.S., Command and General Staff School, Fort Leavenworth, Kan., to Chanute Field, Ill.

First Lieut. Charles B. Austin, A.S., relieved from duty and training at the A.S.T.S., Langley Field, Va.

First Lieut. James L. Grisham, A.S., relieved from duty and training at the A.S.T.S., Langley Field, Va.

First Lieut. Walter E. Richards, A.S., McCook Field, Ohio, Mass. Inst. Tech., Boston, Mass.

Capt. David S. Seaton, A.S., O.C.A.S., Kelly Field, Tex., to Langley Field, Va.

Mast. Sergt. Birdie E. Sauers, 43rd School Squad. A.S., Kelly Field, Tex., retired.

Lieut. Col. Charles H. Danforth, A.S., Langley Field, Va., to Fourth Corps Area, Atlanta, Ga.

First Lieut. Mark R. Woodward, A.S., Foreign Service, to Bolling Field, D. C.

First Lieut. Alfred E. Waller, A.S., Foreign Service, to Middletown, A.I.D., Pa.

First Lieut. George A. McHenry, A.S., Foreign Service, to Brooks Field, Tex.

First Lieut. John H. Stokes, jr., A.S., Delaware O.R.D., Pedricktown, N. J., to Watertown Arsenal, Mass.

Maj. Henry C. K. Muhlenberg, A.S., Command and Gen. Staff School, Fort Leavenworth, Kan., to U. of W., Seattle, Wash.

Maj. Maxwell Kirby, A.S., Command and General Staff School, Fort Leavenworth, Kan., to U. of I., Urbana, Ill.

Capt. John G. Whitesides, A.S., U. of I., Urbana, Ill., to Langley Field, Hampton, Va.

Capt. Harry B. Flounders, A.S., Fairfield A.I.D., Ohio, to Agr. & Mech. Coll. of Texas, College Station, Tex.

Capt. Francis M. Brady, A.S., Mitchel Field, N. Y., to Centre d'Instruction des Spécialitiés de l'Aviation, Bordeaux, France.

First Lieut. Max Balfour, A.S., Paris, France, to Mitchel Field, N. Y.

Sec. Lieut. Felix N. Parsons, A.S., Brooks Field, Tex., to San Francisco, and sail on or about July 2, 1924, for Hawaii.

First Lieut. Archie B. Whitlow, A.S., (Inf.) to 6th Inf., Jefferson Barracks, Mo.

Capt. Frank H. Pritchard, A.S., Kelly Field, Tex., to McCook Field, Ohio.

First Lieut. Wesley A. Zellner, A.S., Brooks Field, Tex., to Middletown A.I.D., Pa.

Maj. James E. Chaney, A.S., Rome, Italy, to Langley Field, Va.

Sec. Lieut. Albert G. Kelly, A.S., Brooks Field, Tex., to Fort Sam Houston, Tex.

Sec. Lieut. Elmo Shingle, A.S., Brooks Field, Tex., to Fort Sam Houston, Tex.

First Lieut. Walter E. Richards, A.S., Mass. Inst. Tech., Boston, to McCook Field, Ohio.

Maj. John F. Curry, A.S., McCook Field, Ohio, to assume command of McCook Field, July 1, 1924.

A Record Breaking Photograph

A most interesting map of the city of Dayton was obtained on May 2, when Lieuts. John A. Macready and A. W. Stevens, of McCook Field, took the supercharged LePere, Macready's famous altitude ship, to a height indicated on the altimeter as 36,000 ft., corrected to 31,540 ft., and while at that ceiling, nearly 6 mi. high, photographed the city lying beneath them. Several accomplishments were the reward of this experiment; the first being an unofficial two-man altitude record; the second, the first instance of a photograph being taken from such a high altitude; and the third, the photographing of the greatest area ever included in a single exposure. Nineteen square miles, covering almost the whole city of Dayton, are shown with remarkable clearness. River, streets, parks, and outstanding buildings are easily spotted.

The value of such an achievement of the camera for war purposes is great, indeed. A plane flying at such an altitude is beyond the range of sight or hearing of those on the ground. It is out of the range of anti-aircraft guns. Still a perfectly clear map of territory passed over can be secured, the topographical features of which can be brought out by enlargement processes.

The camera used was the Fairchild automatic K3, developed jointly by the Engineering Division and the Fairchild Aerial Camera Corp. This camera is 19½ in. high, 16 in. wide and 15 in. long; the mount is 23 in. long, 20 in. wide and 8 in. high. The total weight of the camera and accessories is 55 lb. Panchromatic hyper-sensitized films were used.

3d Attack Group Tests PG1

The 3d Attack Group, Kelly Field, recently received a PG1 airplane from the Engineering Division, McCook Field, for a performance test. This airplane is an armored single seater attack plane with the Packard 1237 motor. Its high speed is approximately 116 mi./hr. and service ceiling approximately 5,000 ft.; landing speed approximately 58 mi./hr.; and endurance, 2¼ hr.

This plane was sent to the Third Attack Group under the belief that considerable benefit would be derived from the comment and criticism. It was also understood that the reproduction of this airplane was not under consideration but, in view of the fact that the airplane actually existed, the Attack Group should have the benefit which might be obtained by flying and studying it, and so either crystallize the present sentiment against an armored attack airplane or else make the question open for consideration.

The plane was flown by practically every pilot in the Group and also by several pilots of the 10th School Group, and there has been no complaint against its flying qualities.

A.S.O.R.C. Take Notice

Many members of the Air Service Officers' Reserve Corps who saw action in France are taking advantage of the semi-annual opportunity to brush up on aerial tactics, according to Col. T. A. Baldwin, Air Officer, Governors Island. To maintain their standing these reserve officers must take a semi-annual physical test. For this purpose a Flight Surgeon is now on duty each Tuesday and Saturday at the Post Hospital, Governors Island, between 9 a. m. and 4 p. m.

"The privilege of flying Army planes," stated Colonel Baldwin, "is open to all Air Service Reserve Officers who have, first, demonstrated their ability by flights under a qualified instructor, and are reported as competent to fly alone; second, complied with all rules, orders, and regulations governing the use of Army aircraft by reserve officers, including the filing of a statement that they clearly understand that flights while in inactive status are at their own risk; and, third, demonstrate to a flight surgeon that their physical conditions are satisfactory for solo flights."

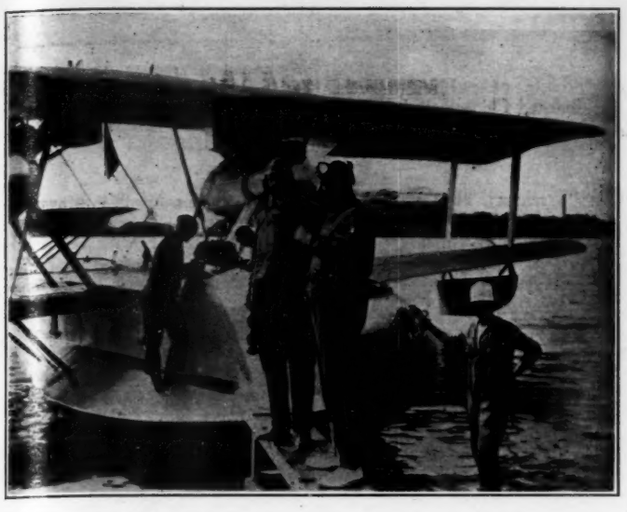


Photo Kadel & Herbert

Secretary of the Navy Wilbur (left) after his first flight, made in the Wright-engined PN7 flying boat. His aide, Capt. W. R. Gherardi, piloted the plane

Change in Station

The 7th Division Air Service, consisting of the 16th Obs. Sqn. and the 9th Photo Sec., has been transferred from Marshall Field, Ft. Riley, Kan., to Richards Field, Kansas City, Mo.

U. S. NAVAL AVIATION

Schneider Cup Team Designated

The Navy seaplane pilots who will defend the Schneider Maritime Aviation Cup at Baltimore, Oct. 24-25, against the challenging teams of Great Britain and Italy, have been designated. They are Lieut. David Rittenhouse, winner of last year's Schneider race; Lieut. A. W. Gorton, also a member of the 1923 team; Lieut. George T. Cuddihy and Lieut. Ralph A. Ofstie. Lieut. Lester D. Hundt and Boatswain Earl E. Reber, will be alternate pilots.

The team will be in charge of Lieut. F. W. Wead, U.S.N., who was in charge of the Schneider Cup team last year.

Lieutenants Wead and Ofstie are on duty in the Bureau of Naval Aeronautics; Lieutenants Rittenhouse, Gorton, Cuddihy and Hundt are stationed at the naval air station at Anacostia, and Boatswain Reber is stationed at the Naval Aircraft Factory in Philadelphia.

The conditions of the Schneider Cup contests, which are held annually, provide that any country winning three times in five years obtains permanent possession of the Cup. Italy has won twice since 1919, in 1920 and 1921, so an Italian victory this year will mean permanent possession for Italy. The Cup was won in 1922 by an English entry. The contest is held each year in the country of the entry winning the preceding year.

Plane Brings Relief to Sick Explorer

An H16 seaplane was sent from the naval air station at Coco Solo, Canal Zone, to an Indian village on the San Blas coast of Panama on May 28 to give medical assistance to Dr. Baer, leader of an exploring party from the Smithsonian Institute, Washington, who was critically ill. The plane arrived at the village within six hours of the receipt of the message, but unfortunately Dr. Baer had died in the interval.

An unusual honor was conferred on the members of the plane crew that went to the assistance of Dr. Baer by the San Blas Indians when they permitted the airmen to take with them on their departure a number of household gods belonging to the tribesmen. This was due to a successful extraction of a bad tooth for the chief of the tribe by Flight Surgeon McClintock. It seems that in 1640 an itinerant Scotch doctor visited the Indians and cured many who were ill. Images of the doctor have been used as gods by the Indians during the centuries since that time.

Naval Air Orders

Lt. (jg) Paul E. Pihl (CC), det. Mass. Inst. of Tech. Cambridge, Mass.; to Naval Aircraft Factory, Phila.

Gunner Claude G. Alexander, det U.S.S. Promethesus; to Aircraft Sqdrn. Battle Flt. involving flying.

Lt. (jg) John F. Rees, det. U.S.S. Arkansas; to temp. duty, Nav. Aircraft Factory, Navy Yard, Phila.

Lieut. Andrew C. McFall, det. Nav. Aircraft Factory, Navy Yard, Phila, Pa.; to Aircraft Sqdrn. Setng. Flt., involving flying.

Lt. (jg) Dixwell Ketcham, det. U.S.S. Richmond, to Aircraft Sqdrn. Setng. Flt. involving flying.

Lt. (jg) Walter W. Smith, det. Observation Plane Sqdrn. Six, Setng. Fleet; to U.S.S. Texas involving flying.

Ens. Cecil C. Adell, det. Naval Academy, Annapolis, Md.; to Naval Aircraft Factory, Navy Yard, Phila., Pa.

Lt. Comdr. Joseph P. Norfleet, det. U.S.S. Shenandoah; to Bu. of Aero. Navy Dept. involving flying.

Lt. (jg) Cato D. Glover, to duty Aircraft Sqdrns. Setng. Flt. involving flying. Uncompleted portion orders 6-4-24 revoked.

Lieut. Leon C. Frost (DC), det. Rec. Ship, San Francisco; to Nav. Air Sta., San Diego, Calif.

Ens. Alvin I. Malstrom, Det. Naval Academy, Annapolis, Md.; to under instr. in aviation, Naval Air Station, Pensacola, Fla.

Lt. Comdr. Frederick Cares (MC), upon expiration of leave absence, det. Naval Air Station, San Diego, Calif.; to Naval Air Sta., N.O.B. Hampton Rds., Va.

Lt. (jg) William M. McDade, to further instr., Naval Air Sta., Pensacola, Fla.

Lt. (jg) Earl B. Bark, det. Naval Air Sta., N.O.B. Hampton Rds., Va. Resignation accepted 6-14-24.

Lieut. Alma C. Smith, (MC), det. Naval Air Sta., N.O.B., Hampton Rds., Va.; to U.S.S. Langley.

Secretary Wilbur Makes First Flight

Secretary of the Navy Wilbur made his first flight in a Navy plane on June 7, flying from the Naval Air Station at Hampton Roads to the naval air station at Anacostia, D. C., in a PN7 seaplane, piloted by his aide, Capt. W. R. Gherardi. Five planes from Torpedo and Bombing Plane Squadron One, at Hampton Roads, acted as escort planes for the PN7 when the Secretary left Hampton Roads about 1 p. m. Another PN7 accompanied the Secretary's plane to Washington.

Prior to leaving Hampton Roads the Secretary inspected the naval air station there, and the units of the Aircraft Squadrons Scouting Fleet now at that station. On the day before the flight the Secretary, accompanied by the Commandant of the Fifth Naval District and the Commandant of the Norfolk Navy Yard, visited the airship tender Patoka, undergoing conversion at Norfolk.

CALENDAR OF AERONAUTICAL EVENTS

March 25.	Start of the British World Flight, Southampton, England.
April 6.	Start of World Flight of the U. S. Army Air Service, Seattle.
July 5-6.	Zenith International Airplane Efficiency Race, Paris, France.
July 28.	National Guard Air Meet, Miller Field, New Dorp, S. I., N. Y.
August.	"Tour de France des Avionnettes." International Round-France race for light airplanes.
Oct. 2-4.	International Air Races, incl. Pulitzer Trophy Race, Dayton, Ohio.
Oct. 24-25.	Schneider Cup Race, Baltimore.
Dec. 17.	Twenty-first anniversary of the first successful airplane flight.

BACKFIRES

Sad commentary on the decline of "English spoken" in Victor Emmanuel's kingdom—from the May 26, 1924, issue of our esteemed contemporary, *La Gazzetta dell 'Aviazione* of Milan Italy:

"It is reported from New York that two American engineers, *Messrs. Maxcook and Field*, have succeeded after five years of study in producing a silent engine for airplanes. They seem to have thus solved the problem which so many inventors and constructors, despite all efforts, had tackled in vain, namely, that of eliminating all noise from aeronautical engines without reducing their horsepower."

Hear the vociferous cheers arising from Dayton.

* * * *

News item devoted to those who still doubt the international nature of aviation:

"A contract has been placed with M. Comte, director of the Dubendorf Flying School, Switzerland, for the construction of two seaplanes of his own design and for the overhauling of a series of Fokker and Hanriot single-seater fighting planes which have been purchased by the Chinese war minister. The Fokker and Hanriot machines are evidently Swiss disposal stock, which were originally German and French ex-war stock."

The Aeroplane, in reporting this unusual transaction, wonders who will claim the credit if a French designed, Italian built and Swiss reconditioned Chinese airplane flown by anything but a Chinese pilot breaks a record, or someone's neck, in Manchuria.

* * * *

A halt should be called to news items of this sort:

"Washgum, N. Dak.—Public spirited citizens of this progressive community are greatly heartened in their efforts to obtain a municipal landing field for Washgum. The transcontinental air mail service will probably stop at Washgum in the near future, according to private advice received by Mrs. B. Truthful Glumph, a cousin of the chief office boy of Col. Paul Henderson, Chief of Air Mail Service in Washington."

* * * *

The keen hearing faculties of some reporters are past wondering. It's a gift. But sometimes they are combined with a stupendous ability to draw conclusions, such as is disclosed by the following passage from the *New York Times* of June 10:

"The plaintive cry of a snipe could be heard above the dull roar of the engine. 'That means bad weather,' observed the pilot."

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PUBLISHER'S NEWS LETTER

Inevitably, there has been criticism by other manufacturers of the order placed with the Atlantic Aircraft Corporation by the Army Air Service for 100 welded steel fuselages for DH planes. This criticism in effect is that (1) the order was not given to the lowest bidder or divided between the three companies which were under Atlantic Aircraft; (2) that the business has been placed with a new company which, though operating an American factory with American personnel, represents the entry of a foreign manufacturer into the field; (3) that the result will be to give foreign interests the benefit of our information; (4) that the placing of a comparatively large contract with a new manufacturer is an injustice to those established American manufacturers who have no business at all or who are completing small contracts with no new business in sight.

While we understand thoroughly the desperate position of many of our oldest aircraft manufacturers and believe that they should receive every reasonable consideration from the Government, if the matter is looked at broadly some of these criticisms lose much of their force. Without specific or official information in regard to the policy which dictated this particular contract, we believe that officials responsible for Air Service policies would seek to justify their course on the following grounds:

American manufacturers have been fighting for the same principles upon which this order was placed; that is, that contracts should not be subject to cut-throat competition, but that prices should be negotiated and due consideration given to technical ability, experience and manufacturing facilities. This policy was followed for the first time in the Atlantic Aircraft contract, and other manufacturers who have been advocating it may consider it an advantage as indicating a new policy for the whole industry.

* * * *

Fokker has been represented in this country for nearly five years. During that time he has built for the American Air Service in his Dutch factory thirty airplanes and received about a half a million dollars for his work. Hereafter planes embodying Fokker engineering practice or construction methods will be manufactured by an American company in an American factory with American personnel, thus doing away with the argument advanced previously on the score of cheap foreign labor competition.

The advent of the Atlantic Aircraft Corporation does not add another manufacturing plant to the aircraft industry, as the corporation has taken over the complete Wittemann factory especially built since the war for aircraft construction and which was closed down last January. The practical effect is the merger of two existing aircraft interests.

In any fair discussion of this matter it should not be overlooked that manufacturers, both American and foreign, are anxious to create markets for their products abroad and are encouraged to do so by their governments. The fact that some American aircraft manufacturers have sold the right to produce their latest products to foreign manufacturers are cases in point.

* * * *

Allowing a foreign airplane constructor to have access to our aircraft technical information may be a danger to our national security. But this point of view seems narrow and out of step with the trend of the times, with the qualification that if military or naval secrets in aircraft construction are important enough to be a national asset, they should be kept confidential.

But more important than any danger of our information getting abroad is the fundamental fact of the development of a sound and prosperous aircraft industry. At the present time our aircraft industry is composed of all kinds of units from dreamers with revolutionary ideas and some financial backing to well financed companies with engineering and manufacturing experience. Between the two are all sorts of enterprises more or less struggling against the inevitable periods of no work and rush orders. But taken as a whole the American aircraft industry is on a quarter time basis.

With this condition it is only natural that there should be discouragement over the giving of a large order for standard work to a company which, while American in name and personnel and principally financed by Americans, is the outcome of a desire of a foreign constructor to enter the American field.

* * * *

Sometimes, when fulsome letters of praise are received they are regarded by a publisher as one of the pleasant parts of the daily routine. Experience has shown, however, that the comments to watch are the "kicks" or critical suggestions, the object being to learn of errors so as to be able to correct them. When, however, the praise contains a classical quotation, we are not apt to overlook such an opportunity. So here it is. Major Ford Ashman Carpenter, the leading aviation meteorological expert on the West Coast, erupts a rose colored geyser of praise in the following pithy sentences. "Busy as I am, I feel the urge of writing you, extending my hearty congratulations on your stand editorially in AVIATION. You have done a bold thing and such a move is in the right direction. As you well say, 'Publicity never hurts anybody or anything!' As was said of Sir Galahad 'His strength was as the strength of ten, because his heart was pure.' We are called upon out here very frequently to recommend reliable books and magazines dealing with the truth about aviation, and aeronautics in general, and we always unhesitatingly recommend your admirable magazine. If it is AVIATION, it is so!"

We hide our blushes behind a smoke screen of "Brickbats and Bouquets."—L.D.G.

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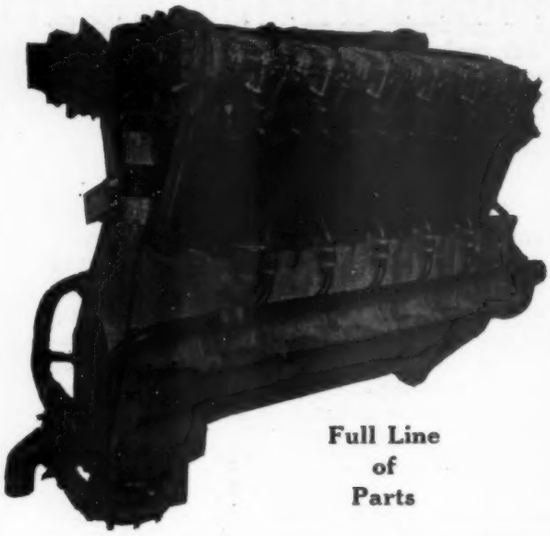

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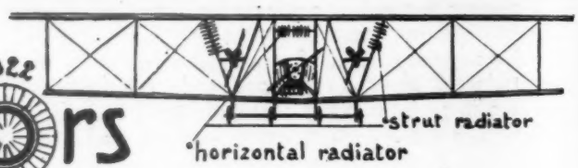

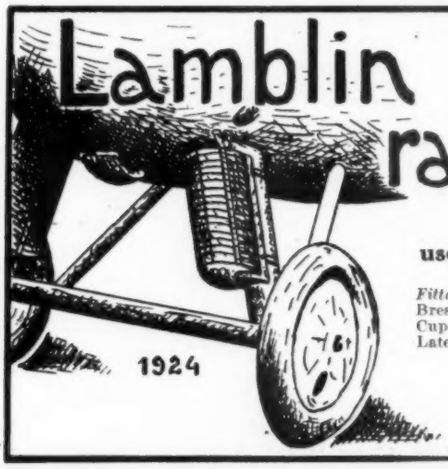

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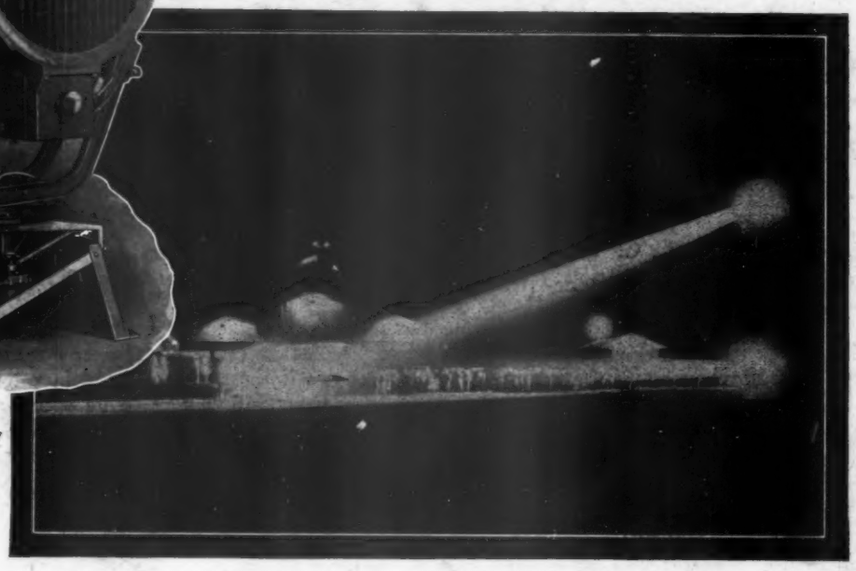

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